

16-channel analogue HD video recorder HDCC90020



User guide

Version 1.0



English

This user guide contains important information on starting operation and using the device.

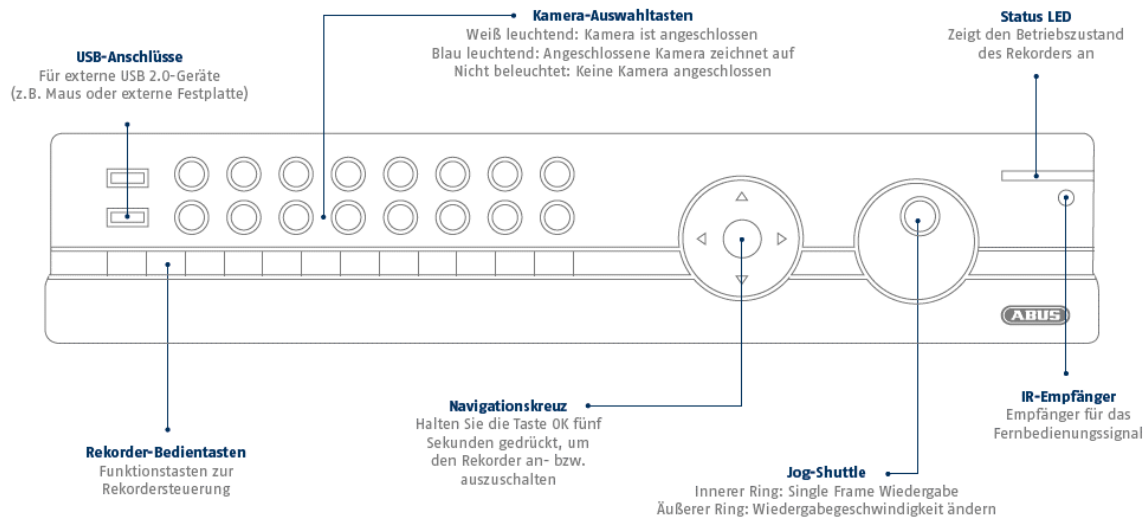
Make sure that this user guide is handed over when the product is given to other persons.

Keep this user guide to consult later.

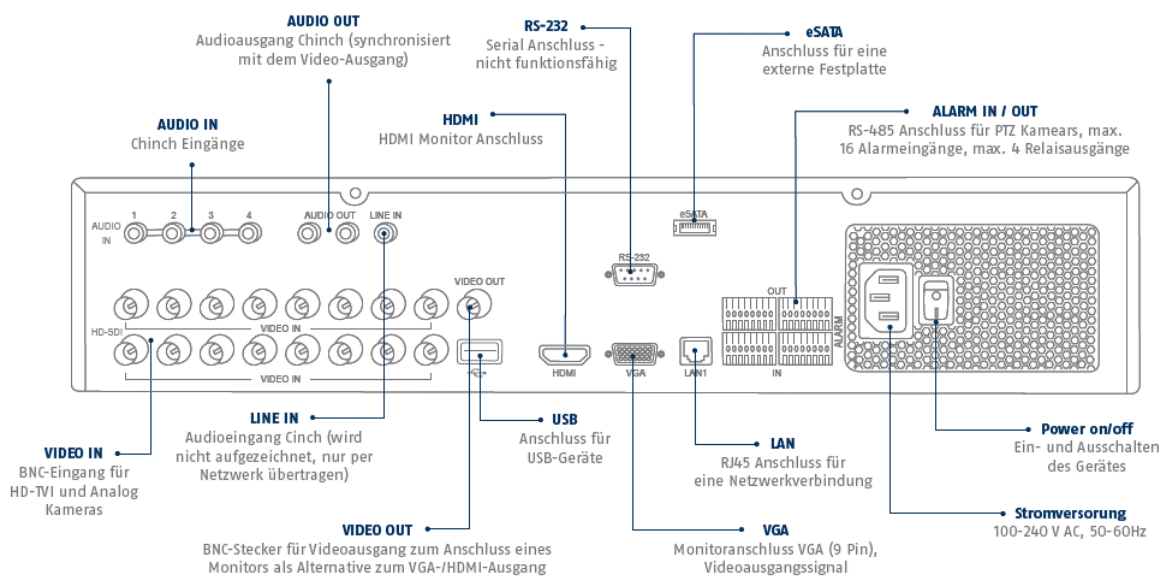
A list of contents with the corresponding page number can be found in the index.

Device overview

Front



Rear



System operation

General

The device can be controlled using the following:

- Control panel on the front of the device
- IR remote control
- a USB mouse

Connections at the back of the device



Note

Take a look at the overview on page 3.

No	Name Function
1	AUDIO IN <ul style="list-style-type: none"> • 4 Audio cinch inputs
2	VIDEO OUT <ul style="list-style-type: none"> • Spot output
3	VGA: <ul style="list-style-type: none"> • VGA monitor connection (9-pin), video output signal
4	LAN: <ul style="list-style-type: none"> • Ethernet LAN connection
5	USB: <ul style="list-style-type: none"> • USB connections for operating with a mouse and data export
6	HDMI <ul style="list-style-type: none"> • HDMI monitor connection
7	AUDIO OUT: <ul style="list-style-type: none"> • BNC audio output (synchronised with the video output)
8	POWER SUPPLY <ul style="list-style-type: none"> • 100–240 V AC connection for power supply
9	ALARM IN/OUT <ul style="list-style-type: none"> • 16 alarm inputs/4 alarm outputs
10	RS-485 <ul style="list-style-type: none"> • Connection for pan tilt zoom (PTZ) cameras
11	JOG DIAL <ul style="list-style-type: none"> • For selecting the operating mode
12	eSATA <ul style="list-style-type: none"> • Connection for an external hard drive
13	VIDEO IN: <ul style="list-style-type: none"> • BNC input for HD-TVI and analogue cameras
14	LINE IN <ul style="list-style-type: none"> • Audio input for 2-way communication

Operating with a mouse



Note

The further descriptions contained in this user guide involve using a mouse.

The device is suitable for use with a USB mouse. Connect the mouse to the USB port.

Button	Function
Left	Single click: <ul style="list-style-type: none"> • Selection in the menu, activation of an input field or a tab, display of the Quick Set menu. Double click: <ul style="list-style-type: none"> • Switch between the screen display of single and multiple images in the live view and during playback. Click and drag: <ul style="list-style-type: none"> • Set up private masks or zones.
Right	Single click: <ul style="list-style-type: none"> • Open the pop-up menu. • Return to the previous menu.
Scroll wheel	In live view: <ul style="list-style-type: none"> • Display previous/next camera.

Control panel on the device



Note

Refer to the overview on page 1.

Name Function
Recorder buttons: MENU: <ul style="list-style-type: none"> • Call up main menu • Switch key tone on/off (press for five sec.) REC: <ul style="list-style-type: none"> • Call up menu for manual recording PLAY: <ul style="list-style-type: none"> • Open playback menu ZOOM+: <ul style="list-style-type: none"> • Enlarge image section in PTZ working mode ZOOM Out: <ul style="list-style-type: none"> • Reduce image section in PTZ working mode

- Switch video output in live working mode:
Monitor – Spot Monitor or Video Out – Video Spot Out (press Zoom, then press the OK button)

FOCUS+:

- Focus adjustment in PTZ working mode

FOCUS-:

- Focus adjustment in PTZ working mode

IRIS+:

- Opening the Iris

IRIS-:

- Closing the Iris in PTZ working mode

PTZ:

- Activate the PTZ control

MODE

- Change screen views

KEYLOCK

- Lock control buttons

USB connections:

For external USB 2.0 devices (e.g mouse, external hard disk drive or NVR writer)

Name

Function

Camera select buttons 1,2,3 etc.

Camera status display:

- Lit white: camera is connected.
- Lit blue: camera connected is recording.
- Not lit: no camera connected

In live view:

- select camera and display in full screen view

Navigation cross:

During playback:

- ▲, ▼ Adjust speed
- ◀, ▶ Previous/next day

In live view:

- Channel selection

In menus:

- Navigate

OK button

- Press and hold for five seconds to switch the device on and off
- Confirm selection
- Activate/deactivate 'checkbox'

During playback:

- PLAY/PAUSE

Slow/fast playback:

- Normal playback speed

Jog dial:

During playback:

- Outer ring (shuttle ring) for slow or fast playback
- Inner ring for playback of individual frames

In menus:

- Inner ring moves cursor up/down
- Outer ring moves cursor left/right

In live view:

- Channel selection

DVR status LED:

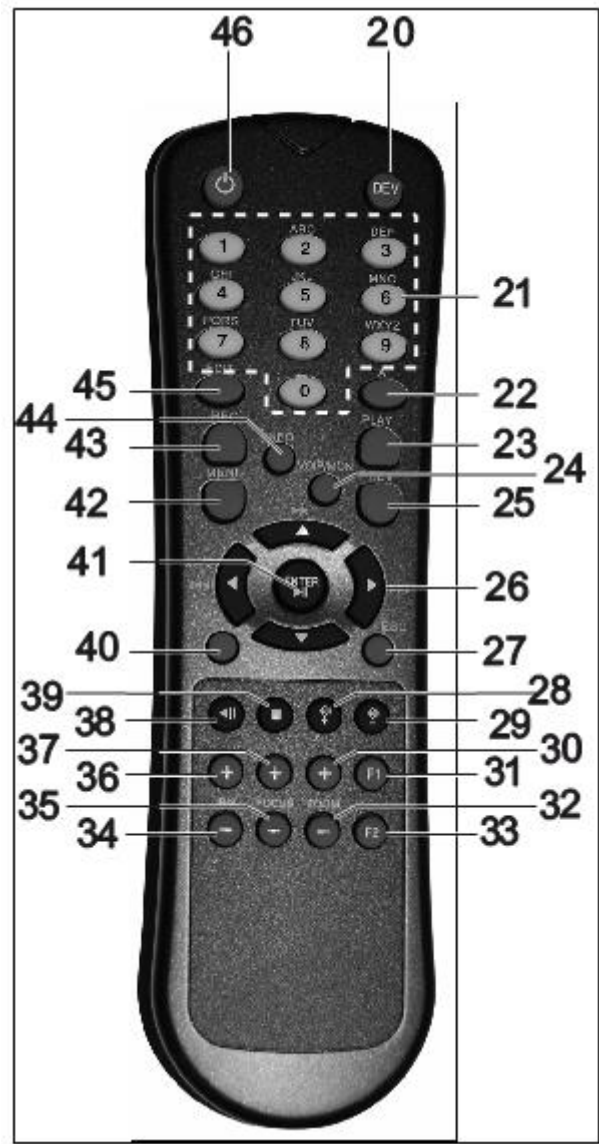
Device status display:

- Lit white continuously: System status OK
- Flashes white: system status okay, recording settings stored, monitoring mode active
- Lit blue continuously: at least one camera is currently recording
- Lit red continuously: system maintenance required

IR receiver:

For remote control

Remote control (TVAC40930)



Control elements on the remote control



Note

Refer to the illustration of the remote control on page **Fehler! Textmarke nicht definiert..**

No	Name Function
20	DEV: Assign the device ID to the remote control
21	Alphanumeric buttons: <ul style="list-style-type: none"> Select camera (channel) in live view Input letters, numbers into input fields
22	A: Change input (large/small, symbols, figures)
23	PLAY: Start playback
24	VoIP <ul style="list-style-type: none"> Unused
25	PREV: Change screen display in live view
26	Navigation buttons: During playback: <ul style="list-style-type: none"> ▲, ▼ Adjust speed ◀, ▶ Previous/next day In live view: <ul style="list-style-type: none"> Select camera (channel selection) In menus: <ul style="list-style-type: none"> Navigate
27	ESC: <ul style="list-style-type: none"> Unused

No	Name Function
28	Unused
29	Unused
30	Zoom+: Enlarge image section in PTZ working mode
31	F1:

	In list fields <ul style="list-style-type: none"> Selection of all options
32	Zoom Out: Reduce image section in PTZ working mode
33	F2: Switch between tabs
34	IRIS-: In PTZ working mode: <ul style="list-style-type: none"> Closing the Iris
35	Focus-: In PTZ working mode: <ul style="list-style-type: none"> Reduce image section in PTZ working mode
36	IRIS+: In PTZ working mode: <ul style="list-style-type: none"> Opening the Iris
37	Focus+: In PTZ working mode: <ul style="list-style-type: none"> Enlarge image section in PTZ working mode
38	◀ : Pause/playback in reverse
39	■: Stop playback
40	PTZ: Switch on PTZ control
41	Enter button ▶ : <ul style="list-style-type: none"> Confirm selection Activate/deactivate 'checkbox' During playback: <ul style="list-style-type: none"> PLAY/PAUSE Single play working mode: <ul style="list-style-type: none"> Switch forward individual frame
42	MENU: <ul style="list-style-type: none"> Call up main menu Switch key tone on/off (press for five sec.)
43	REC: Open/start manual recording
44	INFO: <ul style="list-style-type: none"> Switch to another monitor in live view
45	EDIT: General: <ul style="list-style-type: none"> Activate text inputs, spaces in text fields
46	⏻ POWER: Switch on/off (press and hold for five seconds)

Status displays

General

The following status displays provide information about the operating status:

- LEDs on the front of the device
- acoustic signal tones
- icons (display elements) on the monitor.



Note

Note the remarks in the separate quickstart guide.

Displays on the monitor

The device shows the date and time, the camera name and whether a recording is in progress.

- Continuous record: "blue R"
- Motion detection record: "yellow R"

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Quickstart guide

Before you start


The following preparations must be completed:

- 1. Pay attention to the general information, safety information as well as statements on placement and connection, see page 13.
- 2. Check the contents of the package for completeness and damage.

**Note**


Note the remarks in the separate quickstart guide.

Installing the hard disk drive

**Warning**


Switch the device off and disconnect it from the mains electricity.
Ensure proper earthing to avoid static discharge.

- 1. Install a hard disk drive, see separate quickstart guide.
- 2. First make a connection to the motherboard with the blue data cable (small connector).
- 3. Connect the power cable (large connector, 5-core).
- 4. Check that the connections are firmly in place.
- 5. Close the housing.

**Note**

Only use hard disk drives that are authorised for video recording and 24/7 operation.


Make the connections

**Note**

Observe the minimum radius when laying the cables. Do not kink the cables.

- 1. Connect all cameras to the recorder.
- 2. Connect the recorder to the LAN via the network cable.
- 3. Connect the monitor using the VGA or HDMI connection.
- 4. Connect the mouse to the USB port.
- 5. Connect the device to the mains power supply, it will then start automatically.

Configuring the device


**Note**

Note the remarks in the separate quickstart guide.

- Carry out the individual steps in the 'setup wizard ', see page. 18.
- The following settings are configured one after the other: (Sequence)
 - Select the operator console language
 - Administrator configuration
 - Time settings (date, time etc.)
 - Network settings
 - Hard disk drive management (initialisation etc.)
 - Camera settings
 - Recording settings

**Note**

From the ABUS home-page (www.abus.com), find out if new firmware updates are available for this device and install these.

**Note**

Later alteration of date and time can lead to loss of data.

- Note the menu overview on page 26, as well as the information and explanation of the basic operation of the system on page 5.





Note the explanation of:

Live view	page 21
playback	page 24
Data export	page 44
Troubleshooting	page 62

Important safety information

Explanation of symbols

The following symbols are used in this manual and on the device:

Symbol	Signal word	Meaning
	Warning	Indicates a risk of injury or health hazards.
	Warning	Indicates a risk of injury or health hazards caused by electrical voltage.
	Important	Indicates possible damage to the device/accessories.
	Note	Indicates important information.

The following annotations are used in the text:

	Meaning
1. ...	Required action to be carried out in a set order
2. ...	
• ...	List without a set order, given either in the text or warning notice
• ...	

Intended use

Only use the device for the purpose it was designed and built for. Any other use is not considered to be the intended use.

This device may only be used for the following purpose(s):

- In combination with connected video signal sources (analogue/HD-TVI cameras) and video output devices (TFT monitor), this 16-channel HD-TVI video recorder is for the monitoring of objects.



Note

Data storage is subject to national data privacy guidelines.

When carrying out the installation advise your customers of the existence of this guideline.

General

Before using this device for the first time, please read the following instructions carefully and observe all warning information, even if you are familiar with the use of electronic devices.



Warning

All guarantee claims are invalid in the event of damage caused by non-compliance with this user manual.

We cannot be held liable for resulting damage.



Warning

In the event of personal or material damage caused by improper operation or non-compliance with the safety information, we cannot be held liable.

All guarantee claims are void in such cases.

Retain this handbook for future reference.

If you sell or pass on the device on to third parties, you must include these instructions with the device.

This device has been manufactured in accordance with international safety standards.

Power supply

- Only operate this device through a power source which supplies the mains power specified on the type plate.
- If you are unsure of the installation location's power supply, contact your power supply company.



Warning

Prevent data loss.

Always use the device with an uninterruptable power supply UPS with surge protection.

- Disconnect the device from the power supply before carrying out maintenance or installation work.
- The on/off switch on this device does not fully disconnect it from the mains supply.
- To fully disconnect the device completely from the mains, the mains plug must be withdrawn from the mains socket. The device should therefore be positioned so that there is always direct and unimpeded access to the mains plug and the plug can be removed immediately in the event of an emergency.
- To eliminate the risk of fire, the mains plug should be removed from the mains socket prior to an extended period of non-use. Prior to unstable weather and/or when there is a danger of lightning strike, separate

the device from the mains network. Alternatively, connect the device to a UPS.



Warning

Never open the device yourself! There is the danger of electric shock. Should it be necessary to open the device, refer to trained technicians or your specialist installation contractor.

- The installation or replacement of a hard disk drive should only be carried out by trained personnel or your specialist installation contractor.



Warning

Installations or modifications not carried out by trained technicians invalidate the warranty. We recommend that the installation of a hard disk drive is carried out by a specialist installation contractor. Improper installation of the hard disk drive invalidates the warranty.

Overload/over voltage

- Avoid overloading electrical sockets, extension cables, and adapters, as this can result in fires or electric shocks.
- Use surge protection to prevent damage caused by overvoltage (e.g. in electrical storms).

Cable

- Always grasp all cables by the plug connector and do not pull the cable itself.
- Never grasp the power cable with wet hands, as this can cause a short circuit or electric shock.
- Do not place the device itself, items of furniture or other heavy objects on the cable and ensure that it does not become kinked, especially at the connector plug and at the connection sockets.
- Never tie a knot in the cable and do not bundle it together with other cables.
- All cable should be laid so that they cannot be trodden on, or cause a hazard.
- A damaged power cable can cause fire or electric shock. Check the power cable from time to time.
- Do not modify or manipulate the power cable or plug.
- Do not use any adapter plug or extension cable that do not conform to applicable safety standards and do not interfere with the mains or power cables.

Installation location/operating environment

- Place the device on a firm, level surface and do not place any heavy objects on the device.

- The device is not designed for operation in spaces with high temperatures or humidity (e.g. bathrooms), or excessive accumulation of dust.
- Operating temperature and operating humidity: -10°C to 55°C, maximum 85% relative humidity. The device may only be operated in a temperate climate.

Ensure that:

- adequate ventilation is always guaranteed (do not place the device on a shelf, thick carpet, bed or wherever ventilation slits may be covered. Always leave a 10 cm gap on all sides)
- no direct sources of heat (e.g. radiators) have an impact on the device
- the device must not be exposed to direct sunlight or strong artificial light
- the device is not in the immediate vicinity of magnetic fields (e.g. loudspeakers)
- no naked lights (e.g. lit candles) are on, or next to the device
- contact with sprayed or dripping water and caustic fluids is prevented
- the device is not operated in the vicinity of water, in particular, the device should never be submerged (do not place objects containing fluids, e.g. vases or drinks on or near the device)
- no foreign bodies penetrate the device
- the device is not exposed to wide temperature variations, as otherwise there may be condensation from humidity causing electrical short circuits
- the device is not exposed to excessive shock or vibration.

Care and maintenance

Maintenance is necessary if the device has been damaged (e.g. damage to the power cable and plug, or the housing), or if liquids or foreign bodies have got into the interior of the device, or if it has been exposed to rain or damp, or if it does not work properly or has been dropped.

- When conducting maintenance work (e.g. cleaning), disconnect the device from the mains.
- If smoke, unusual noises or smells occur, switch the device off immediately and unplug from the socket. In such cases, the device should not be used until it has been inspected by a qualified technician.
- Have all maintenance tasks carried out by qualified technicians only.
- Never open the housing of the device or accessories. If the housing is open there is the risk of fatal electric shock.
- Clean the device housing and the remote control with a damp cloth.
- Do not use solvents, white spirit, thinners etc. These may damage the surface of the device.
- Do not use any of the following substances:
- Brine, insect spray, solvents containing chlorine or acids (ammonium chloride), or scouring powder.
- Rub the surface gently with the cotton cloth until it is completely dry.



Warning

The device operates with a dangerous voltage level. The device should therefore only be opened by authorised technicians. All servicing and maintenance tasks must be carried out by authorised companies. Inadequate repair work can cause a fatal hazard for the user.

Accessories

- Only connect devices that are expressly suitable for the intended purpose. Otherwise, hazardous situations or damage to the device can occur.

Start-up

- Observe all safety and operating instructions before operating the device for the first time.
- Only open the housing to install the hard disk drive.



Warning

When installing the device in an existing video surveillance system, ensure that all devices have been disconnected from the mains power circuit and low-voltage circuit.



Warning

If in doubt, have a specialist technician carry out assembly, installation and connection of the device.

Improper or unprofessional work on the power supply system or domestic installation puts both you and other persons at risk.

Connect the installations so that the mains power circuit and low-voltage circuit always run separately from each other. They should not be connected at any point or become connected as a result of a malfunction.

Children

- Do not allow electrical devices to be handled by children. Do not allow children to use electrical devices unsupervised. Children may not properly identify possible hazards. Small parts may be fatal if swallowed.
- Also keep packaging film away from children. There is the risk of suffocation.
- This device is not intended for children. If used incorrectly, parts under spring tension may fly out and cause injury to children (e.g. to eyes).

Introduction

Dear Customer,

Thank you for purchasing this product.

This device complies with the requirements of the applicable EU directives. The declaration of conformity can be obtained from:

ABUS Security-Center GmbH & Co. KG
Linker Kreuthweg 5
86444 Affing
GERMANY

To ensure this condition is maintained and that safe operation is guaranteed, it is your obligation to observe this user manual.

Read the entire user manual carefully before putting the product into operation, and pay attention to all operating instructions and safety information.

All company names and product descriptions are trademarks of the corresponding owner. All rights reserved.

If you have any questions, please contact your specialist installation contractor or specialist dealer.



Disclaimer

This user manual has been produced with the greatest of care. Should you identify any omissions or inaccuracies, please contact us at the address shown on the back of the manual. ABUS Security-Center GmbH does not accept any liability for technical and typographical errors, and reserves the right to make changes to the product and user manuals at any time and without prior warning. ABUS Security-Center GmbH is not liable or responsible for direct or indirect damage resulting from the equipment, performance and use of this product. No forms of guarantee are assumed for the contents of this document.



Note

Be aware that alterations to the recorder carried out via the software must be accepted by clicking "Apply"/"Confirm" before leaving the tab or menu.

Unpacking the device

Handle the device with extreme care when unpacking it. Packaging and packaging aids can be reused and as far as possible should be sent for recycling.

We recommend that:

Paper, cardboard and corrugated cardboard, as well as plastic packaging items should be placed in the appropriate containers provided.

If no such facility exists in the area, then these materials should be put into general household waste.

If the original packaging has been damaged, you must start by inspecting the device. If the device shows signs of damage, return it in the original packaging and contact the manufacturer.

Scope of delivery

- ABUS 416-channel HD-TVI video recorder
- USB mouse
- SATA cable and screws for hard drives
- Mains connector plug
- 19" mounting bracket
- CD
- User handbook
- Quickstart guide

General information

To use the device properly, read this user handbook thoroughly and retain it for later use.

This handbook contains instructions for the operation and maintenance of the recorder. Please contact an authorised specialist company for repair of the device.

On-screen keyboard

If you click with the mouse in a text input field, the on-screen keyboard appears:



For simple figure input, the following on-screen keyboard appears:



The keys have exactly the same function as a computer keyboard.

- To input a figure, click on it with the left mouse key.
- To finish the entry, click on **Enter**.
- To delete the figure in front of the cursor, click on **←**.
- To switch between upper and lower case text, click on the framed **a**. The active setting is indicated above the keyboard.
- To cancel an entry, or to leave the field, click on **ESC**.

Starting the device



Attention

The device may only be connected to a mains voltage supply as specified on the type plate.

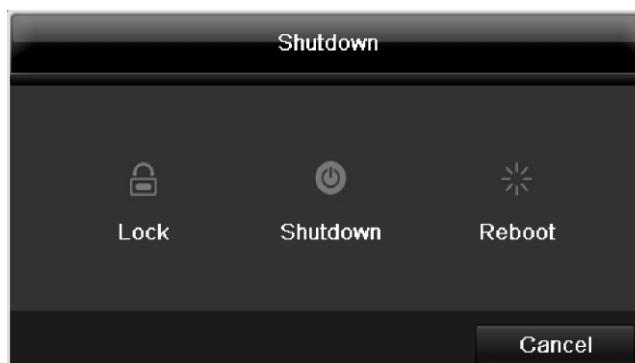
For security, use an uninterruptible power supply UPS.

When the device is connected to the power supply, it starts up automatically and the LED status bar glows.

1. During the start-up procedure, the device carries out a self-test.
2. Finally, the setup wizard appears. End this, to go to live view.

Switching off the device, locking, rebooting

In the main menu, click on Shutdown. The overview appears.



1. To switch off, select the **Shutdown** option and confirm the query with **Yes**. The device is switched off.
 - Do not press any key during the switch off procedure.
 - Now pull out the plug of the power supply unit.
2. To lock the system, select the left hand symbol **Logout**. The user interface is locked. To reach the menu, a password must be entered.
3. To reboot, select the right hand symbol **Reboot**. The device carries out a reboot.

Switching on the device

- Plug in the power supply unit to start the device.

Setup wizard

Setting up the system

The setup wizard guides you through the required basic settings for the system. The video recorder will then be ready for recording and monitoring.

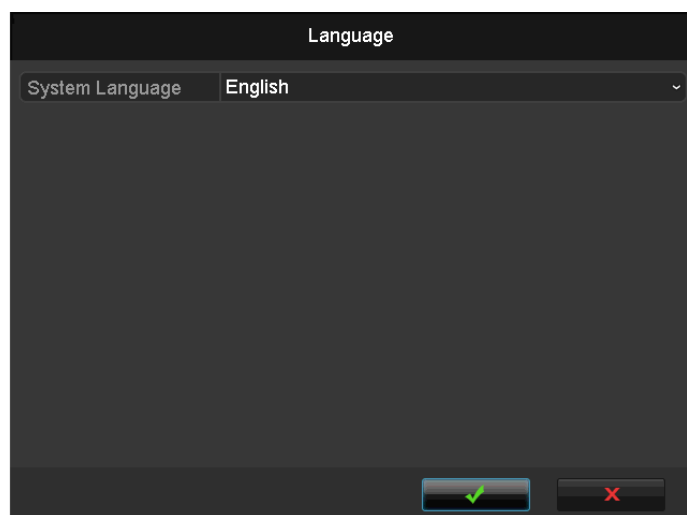


Note

All the advanced settings can be found in the device menu see the overview on page 26.

Following the first switch-on, the language selection appears:

1. Click on the input field and select your language from the list. To proceed, click on ✓. The following query appears:



- Click on Next to start the wizard.



Note

After the system has been set up the 'checkbox' can be deactivated, the tick is hidden and the wizard no longer starts automatically.

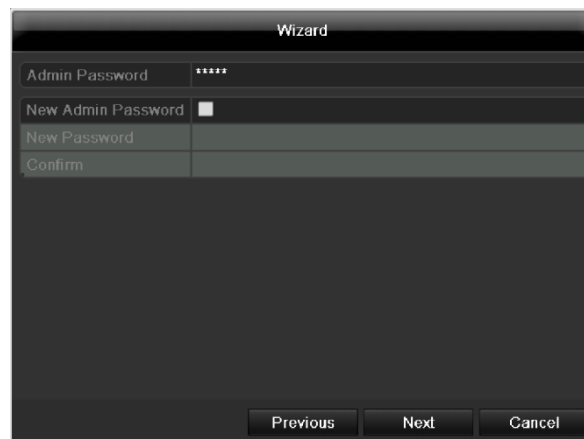
Administrator set up



Warning

Note down the admin password.
The preset password is:

"1 2 3 4 5".



1. Click on the input field and enter the admin password.
2. To assign a new password, activate the 'checkbox' in front of **New Admin Password**.
3. Enter the new password and confirm the entry in the field below.
4. Click on **Next**.

System time and date



1. Enter the system time consisting of date and time.
2. Finish the setting by clicking on **Next**.

Network settings

Wizard	
NIC Type	10M/100M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	192 . 168 . 0 . 20
IPv4 Subnet Mask	255 . 255 . 255 . 0
IPv4 Default Gateway	192 . 168 . 0 . 1
Preferred DNS Server	
Alternate DNS Server	

Previous Next Cancel

i Note

Ask the network administrator responsible whether the DHCP can be selected or the IP address and additional settings have to be done manually.

1. DHCP active: if the DHCP has been set up in the network router, enable the DHCP 'checkbox'. All network settings are then completed automatically.
2. DHCP inactive: enter the data manually (IPv4 address, IPv4 subnet mask as well as the default set up for the IPv4 Gateway = IPv4 address of the router). Alternatively you can also enter the address of the DNS server, which is required for email dispatch.

A typical address assignment could appear as follows:

- IPv4 address: 192.168.0.50
- IPv4 Subnet Mask: 255.255.255.0
- IPv4 Default Gateway: 192.168.0.1
- Preferred DNS Server: 192.168.0.1

i Note

When the device is accessed remotely via the internet, it should be given a fixed network address.

Wizard	
Server Port	8000
HTTP Port	80
RTSP Port	554
Enable UPnP	<input checked="" type="checkbox"/>
Enable DDNS	<input checked="" type="checkbox"/>
DDNS Type	ABUS DDNS
Server Address	www.abus-server.com
Device Domain Name	
User Name	
Password	

Previous Next Exit

i Note

If at the time of the initial installation there is no detailed data on port and DDNS configuration, then use the default settings recommended by the wizard.

1. Server Port: network port for remote access via PC software and App
2. HTTP port: network port for remote access to the web interface of the recorder.
3. Enable UPnP: enables the automatic configuration of the port releases on the router and device display in the windows network environment.
4. Enable DDNS: enables the DDNS function for comparison of the external IP addresses with a DDNS provider.
5. DDNS Type: select the DDNS provider. There is free DDNS access via abus-server.com.
6. Server address: enter the address data for the DDNS provider here (not necessary for ABUS server).
7. User name and password: enter the access data for the DDNS provider here (not necessary for ABUS server).

Hard disk drive management



- 1. To set up a hard disk drive, enable the 'checkbox' with a left click and then click on **Init**.



Warning
This will delete all data found on the disc.

- 2. Click on **OK** to acknowledge the security prompt. The hard disk drive is set up for use. Progress is shown on the status bar.
- 3. Finish the setting with **OK** and then click on **Next**

Camera recording

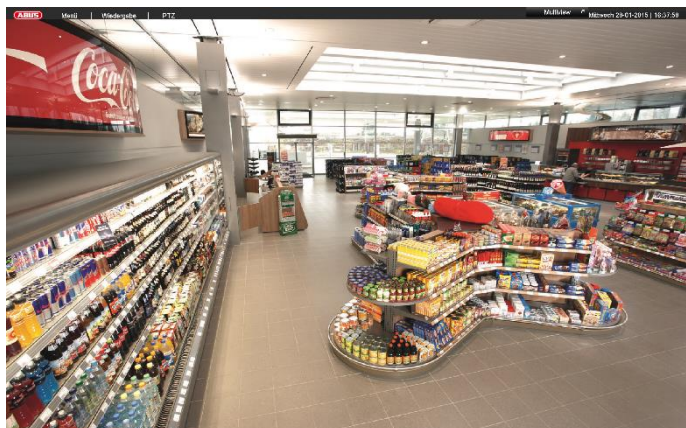


- 1. Select a "camera" from which to record.
- 2. Enable the check box "Start recording".
- 3. Select the recording type. It is possible to select between "Continuous" and "Movement detection".
- 4. Press **Copy** to apply the setting to other cameras. Select the cameras that appear in the new screen. Enable the appropriate checkbox with a mouse click.
- 5. Complete the setting and the setup wizard with **OK**.

Live view

Overview

Live view starts automatically when the device is switched on.

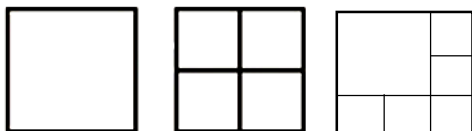


The following menus are found in the header:

- Menu and
- Playback

The device date and time are displayed on the right-hand side of the header. To the left, you will find multi view.

- Click on the icon to open the pop-up menu of the multi view.
- Click on one of the icons in the pop-up bar that appears in order to switch between the different views.



The signals of the connected cameras are displayed on the main screen.

- By double clicking with the left mouse button, you can display the selected camera image in full screen or switch back to the original view.

Status symbols

- The following symbols are displayed depending on the operating status of the device:

Symbol	Meaning
R	Yellow: motion recording <ul style="list-style-type: none"> • recording only upon motion detection
R	Blue: recording <ul style="list-style-type: none"> • continuous recording

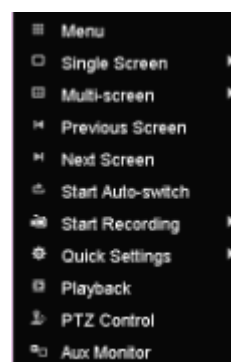
Pop-up menu with mouse operation



Note

Right click when the mouse pointer is positioned on a live image.

The following settings can be made. The arrow pointing to the right indicates that a sub-menu opens for selection:



Menu	Opens the main menu
Single Screen	Full-screen view of the selected camera.
Multi-screen	Various camera layouts
Previous Screen	Displays the previous camera
Next Screen	Displays the next camera(s)
Start Auto-switch	Starts the camera sequence display
Start Recording	Overwrites the record schedule of all cameras connected for continuous or movement recording and initiates this.
Quick Settings	Sets the output mode for the screen display
playback	Switch to playback view
PTZ	Enables the PTZ mode of the selected camera.
Aux Monitor	Switches the mouse control to the AUX monitor



Note

Start Auto-switch:
Specify the display sequence delay in the display settings.



Note

Activation of "AUX monitor" without a connected spot monitor:
Mouse pointer function is disabled.

Selection bar in the camera image

In single or multi-screen, click on a camera image. A selection bar will appear:



(1) (2) (3) (4) (5) (6) (7) (8)

No	Meaning of the symbol
(1)	Area for moving the miniature bar
(2)	Activate/deactivate manual recording
(3)	Instant playback of the last 5 minutes
(4)	Activate/deactivate the audio function
(5)	Open the PTZ control menu (for PTZ cameras only)
(6)	Enable digital zoom.
(7)	Image display settings
(8)	Close the selection bar

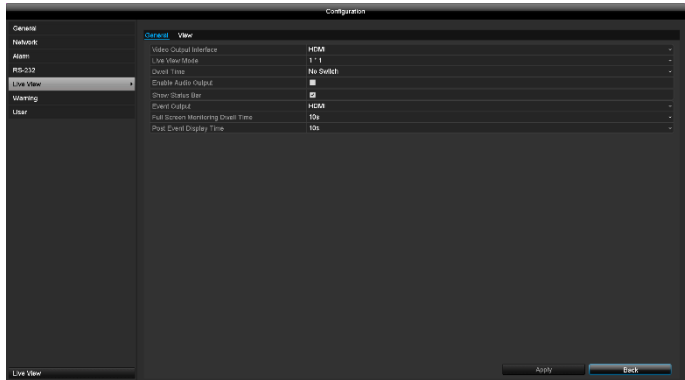
Settings



Note

The following settings are available for the live view.

Open the main menu and click on Configuration. Then click on Live View:



The following settings are available in the General tab:

Video Output Interface	HDMI Select the connection where the settings are changed.
Live View Mode	Various camera layouts 1x1, 2x2, 1+5, 1+7, 3x3, 4x4
Dwell Time	Switching time between the individual cameras during auto-switch.
Enable Audio Output	Activates the audio output (VGA/HDMI/BNC) for the live view.
Display status bar	Activate/deactivate the status bar.
Event Output	Allocate monitor for the output of events.
Full Screen Monitoring Dwell Time	The number of seconds for which the event will be displayed on the allocated monitor.
Post Event Display Time	The number of seconds for which the pop-up window should be displayed in the event of an alarm.



Note

VGA monitor connected:

If a VGA monitor is connected, it will be recognised automatically when the device is started up. The main video signal will be displayed on the monitor.

No HDMI monitor connected:

If no HDMI cable is connected to the monitor when the device is started up, the main video signal will be emitted at the main VGA connection. Connect the VGA cable and restart the recorder to perform automatic detection.

Setting the camera output

You can display a maximum of 16 cameras simultaneously in live view.



1. Click on the View tab:
2. Select the display mode.
 - 1 x 1
 - 2 x 2
 - 1 + 5
 - 1+7
 - 3 x 3
 - 4 x 4
3. Use the navigation keys to allocate the camera signal required to the corresponding screen section.
 - The X setting means that this particular camera is not being displayed.
4. Click on **Apply** to apply the setting.

Playback in live view

General

There are three different options for playback:

- Through the event search in the main menu
- From the live display
- Via Log Information in the maintenance menu.

Note

The "Previous/Next file/day/event" buttons are allocated as follows, depending on the playback mode:

Normal playback:

Pressing one of the buttons switches playback to the previous/next day.

Event search:

Pressing one of the buttons switches playback to the previous/next event.

Data export:

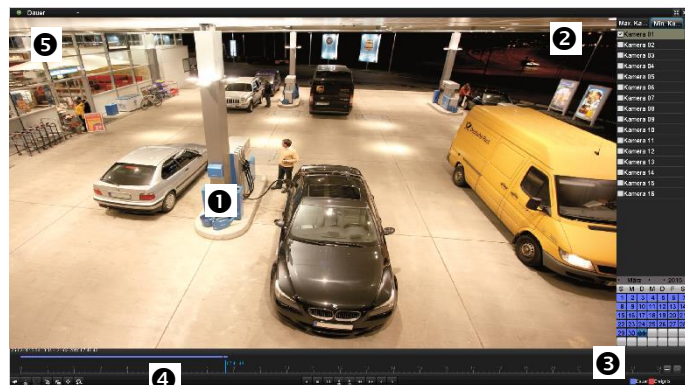
Pressing one of the buttons switches playback to the previous/next file.

Note

It is possible to start playback on up to 16 camera channels at the same time.

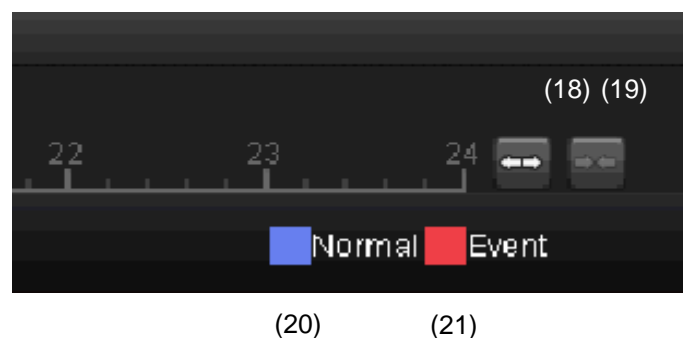
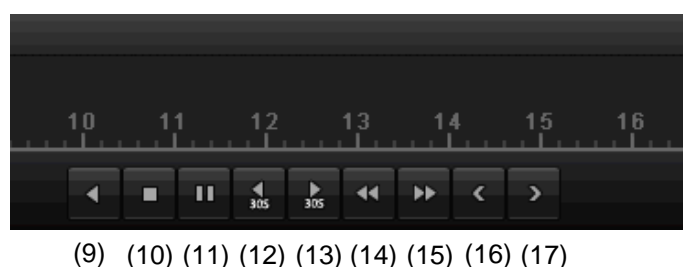
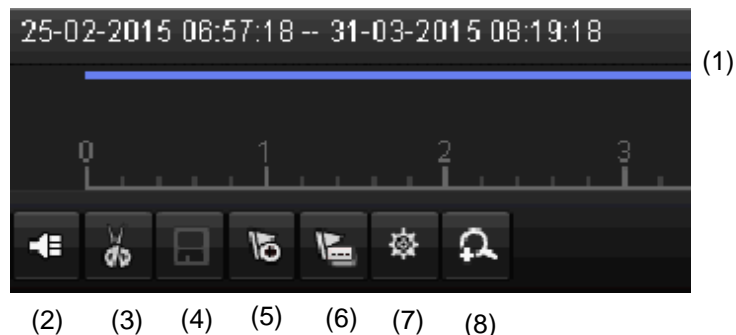
Playback screen

Playback is controlled via the control panel:



Control via the control panel

The control panel (4) is used to control running playback. The symbols have the following meanings:



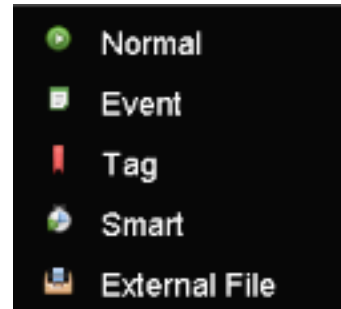
No	Area
①	Running playback with date and time
②	Selection of camera for playback
③	Calendar with recording type
④	Control panel with time bar (see right)
⑤	Selection of playback type

No	Meaning of the symbol
1	Time bar: Click on the time bar with the mouse to continue playback from another point. <ul style="list-style-type: none"> Click on the slider and drag it to a specific time to start playback from that point.
2	Enable/disable audio output.
3	Start/stop video clip export.
4	Save video clip.
5	Add tag (see "Tag" playback type).
6	Add user-defined tag (see "Tag" playback type).
7	Tag management.
8	Digital zoom
9	Reverse playback.
10	Stop playback.
11	Start/pause playback.
12	Go back 30 seconds.

13	Go forward 30 seconds.
14	Go forward in slow-motion (8x → 1x).
15	Fast forward (1x → 8x).
16	Previous day.
17	Next day.
18	Reduce time bar section.
19	Increase time bar section.
20	Tag for continuous recording
21	Tag for event recording (movement, alarm, VCA)

Selecting playback type

Selecting the playback type (5) allows various types of recording and event to be displayed and filtered in the playback view.



Click on "Tag management" (6):



The following menus are available:

Type	Description
Normal	Playback of recorded video data.
Event	Search and playback of video data recorded by means of motion detection or alarm input.
Tag	Search and playback of video data provided with a tag.
Smart	Search and playback of video data via pre-defined full screen motion detection for all recorded data. Additional filter options for movement search and VCA are available in addition.
External File	Search and playback of video data found on a connected external data storage device (USB).

- Click on the edit icon to change the description of your tag. To remove a tag, click on the delete icon.

Device menu

Menu overview

The following menu overview shows the main menus used to set and control the device.

You can also see important information about your device on the right-hand side.

- Click on the menu you need to open it.
- Click on Exit to close the menu overview.

Menu

Settings

Playback

Video Export

Maintenance

Shutdown

Exit

ABUS

General **Cameras** **HDD**

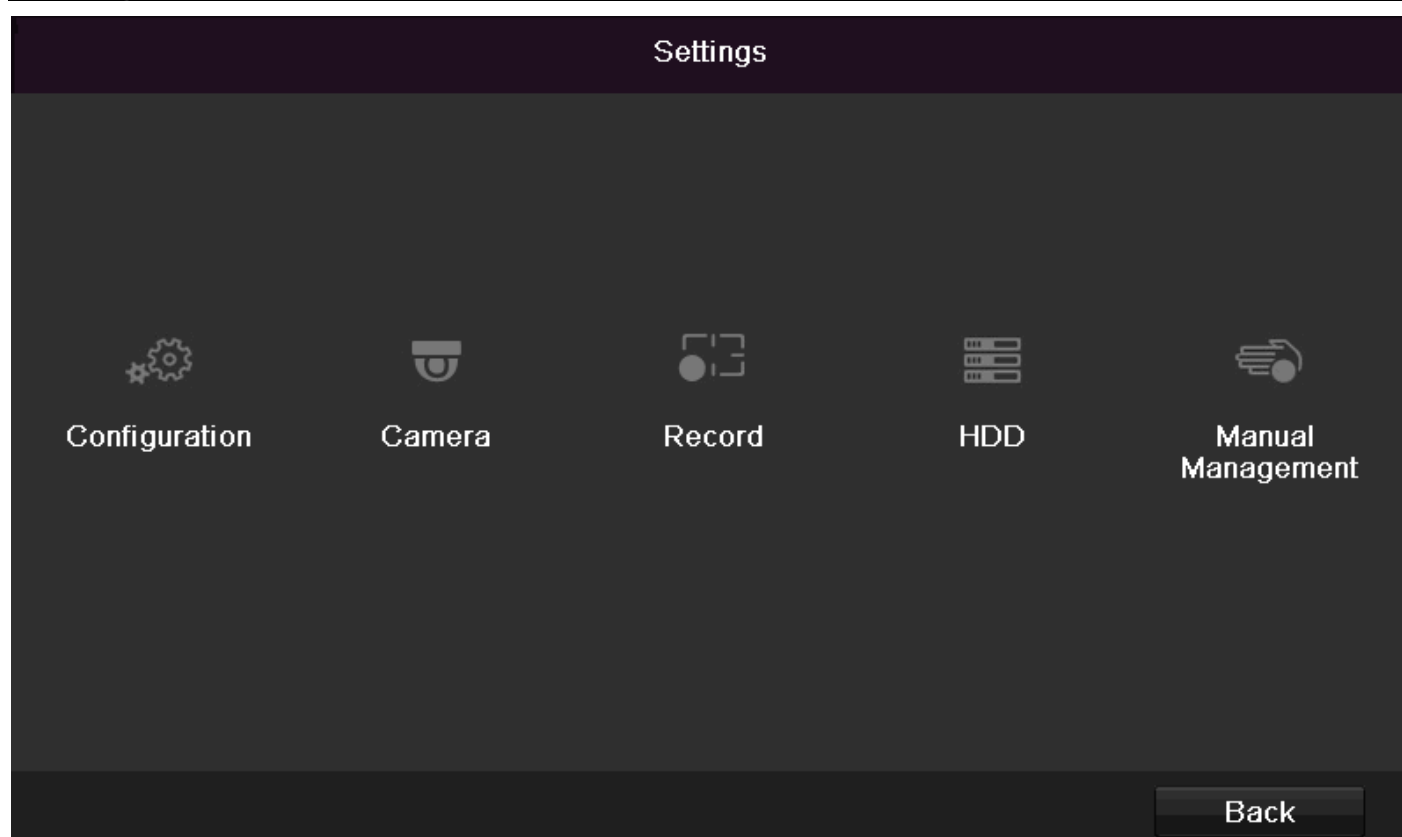
DVR Model: HDCC90020
 Firmware Version: V3.1.2, Build 150327
 Network In/Out: 0 / 200Mbps

	LAN #1	
IP Address	192.168.0.79	
MAC Address	8c:11:cb:20:a6:b4	
DHCP	Yes	

	Port	
HTTP	80	
DVR	8000	
RTSP	554	

Menu	Description
Settings	Leads to the Configuration, Camera, Recording, HDD and Playback menus.
Playback	Parameter-controlled search for video and image recordings which were triggered by events such as motion detection, as well as tags set in playback.
Video Export	Parameter-controlled search for video and image recordings which were triggered by events such as alarms or motion detection, as well as alarm events and tags set in playback.
Maintenance	System information, searching logs, importing/exporting configurations, device maintenance such as upgrading to new firmware, loading defaults, displaying traffic.

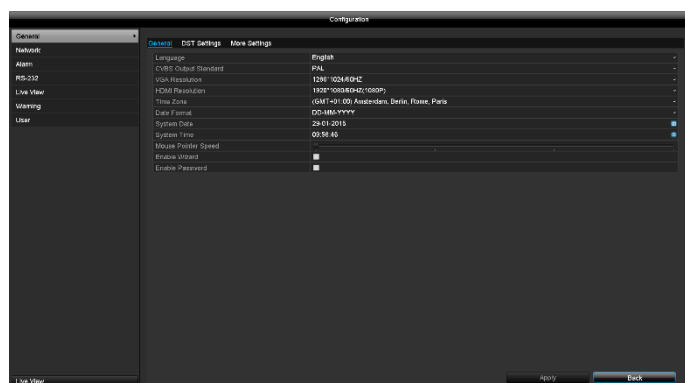
Settings



Menu description

Menu	Description
Configuration	Used to manage all device settings (General, Network, Live View, Warning and User).
Camera	Menu for setting camera parameters (OSD configuration, image mode, motion detection, private zone, tamper monitoring and video loss).
Recording	Menu for setting recording parameters (schedule, camera resolution, holiday etc.)
HDD	Used to initialise and manage a built-in hard disk drive (assign read/write functionality, cameras, manage network drive etc.)
Manual Management	Menu for setting manual recordings.

Configuration



Note

The Configuration menu is used to manage all device settings.



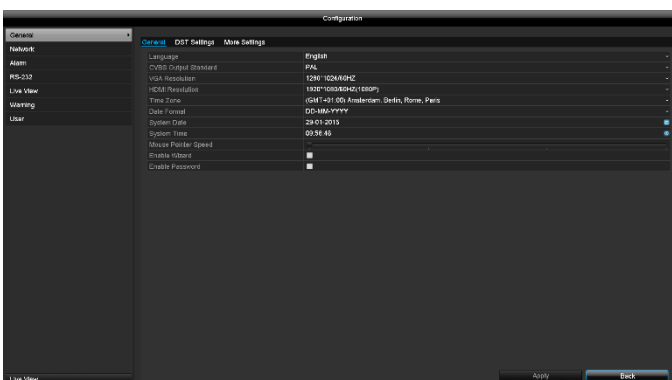
Warning

Ensure that the date and time are set correctly.
ATTENTION:
Subsequent alterations may lead to loss of data.
Ensure data is backed up promptly.

Overview

Menu	Setting	
General	Language, video, time, date, mouse, password, daylight saving time and other settings.	
Network	Required network settings (manual IP, DHCP, PPPOE, DDNS etc.) and overview of network status.	
RS-232	Settings for the serial interface (for servicing purposes only).	
Alarm	Settings for the alarm I/Os for the IP cameras.	
Live view	Display settings and assignment of the event output.	
Warning	Response of the device in exceptional cases (hard disk drive full, network disconnected etc.)	
User	Adding and changing users and assigning access rights.	36

General settings



General tab	Setting
Language	On-screen display language.
CVBS Output Standard	Video output format at BNC video output (PAL/NTSC).
Resolution	Monitor resolution
Time Zone	GMT (Greenwich Mean Time).
Date Format	MM-DD-YYYY, DD-MM-YYYY, YYYY-MM-DD.
System Time	Date, time
Mouse Pointer Speed	Slider (left = low speed, right = high speed)
Enable Wizard	Box ticked: The wizard will appear when the system is started up.
Enable Password	Box not ticked: A password does not need to be entered into the recorder itself. However, the password does need to be entered if accessing via the network. Box ticked: The password needs to be entered in order to use the menu.

DST Settings tab	Setting
Auto DST Adjustment	If the box is ticked, the device switches automatically to daylight saving time.
Enable DST	If the box is ticked, a specific start/end date can be selected.
From/to	Start/end date for daylight saving time.
DST Bias	Daylight Saving Time bias: correction of daylight saving time to reference time.
More settings	Settings
Name	Unique specification of the device.
No	Used for unique identification when using CMS software.
CVBS Output Brightness	Slider (left = lower brightness, right = higher brightness).
Auto. log off	Never/1–30 minutes: controls how long the menu is displayed before it is hidden again.
Menu Output Mode	Use to specify the monitor output for the menu display. If set to auto, the recorder will detect the output.

Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Network configuration

General

It is essential that the network settings are correct if you

- want to control the device and monitor remotely via your browser.



Note

Please read the following general instructions before setting up the device.

A network is the connection of at least two network-compatible devices.

Transmission methods:

- wired networks (e.g. CAT5 cable)
- wireless networks (WLAN)
- other transmission types (Powerline)

All systems have significant similarities but are different in various ways.

Terms

Below there is an overview of terms related to using the device on networks.

Parameter	Setting
IP address	An IP address is the unique address of a network device on a network. It must only appear once on a network. Certain IP address ranges are reserved for public networks, such as the internet.
Private address range	E.g. 10.0.0.0–10.255.255.255 Subnet mask: 255.0.0.0 172.16.0.0–172.31.255.255 Subnet mask: 255.255.0.0 192.168.0.0–192.168.255.255 Subnet mask: 255.255.255.0
Subnet mask	A subnet mask is a bit mask that is used to make decisions and assignments during routing. The standard subnet mask on home networks is 255.255.255.0.
Gateway	A gateway is a network device that allows all other network devices to access the internet. It can be, for example, the computer to which the DSL modem is connected or, most frequently, the router or access point on the network.

Parameter	Setting
Name server	The name server, also known as the DNS (Domain Name Server), is responsible for assigning a unique IP address to a web address or URL (e.g. www.google.de). When a domain is entered into a browser, the DNS searches for the corresponding IP address of the server and forwards the query on to it. The IP of the provider's DNS can be entered here. However, it is often sufficient to select the IP of the gateway. This then forwards the queries independently to the provider DNS.
DHCP	The DHCP server automatically assigns the IP address, subnet mask, gateway and name server to a network device. DHCPs are available in current routers. The DHCP service must be specially set and activated (see the relevant manual for more information). Note: When using fixed IP addresses together with a DHCP server, you should ensure that the fixed IP addresses are outside of the addresses assigned by DHCP to avoid problems occurring.

Port	A port is an interface that enables different programs to communicate. Certain ports are fixed (23: Telnet, 21: FTP), whilst others can be freely selected. Ports are relevant for various applications, e.g. for external access to the device via a browser.
MAC Address	The MAC address (Media Access Control address or Ethernet ID) is the specific hardware address of the network adapter. It is used for the unique identification of the device on a computer network.

Network layout

The device must be physically connected to the network with a CAT5 cable (see Connections on page 3).



Note

Please follow the instructions and notes for the network devices.

Several switches/routers/access points can be connected to one another. Firewalls and other security software may have a negative effect on the network.

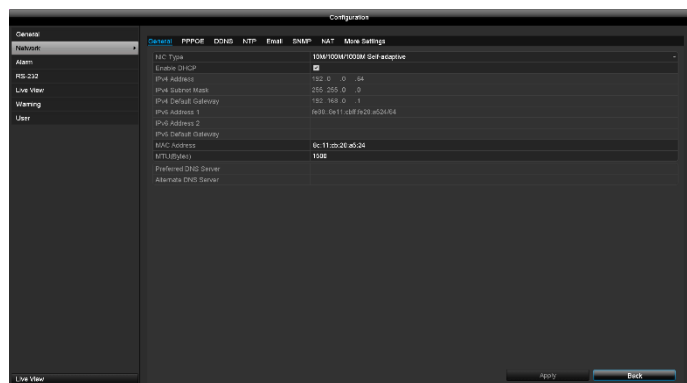


Warning

When using a router, the network clients, and therefore the recorder, are "connected" to the internet and vice versa.
You should make sure that you take protective measures, such as using a firewall, changing your password and changing the port, to prevent unauthorised external access.

DDNS	Server for Dynamic Domain Name System management used to update host names and DNS entries.
NTP	Network Time Protocol. Server for time synchronisation.
Email	Specify email settings to be used when an email is sent to a specific address in the event of an alarm.
SNMP	SNMP is a protocol for displaying the network status via corresponding SNMP software.
UPnP	Universal Plug and Play Settings for the convenient control of network devices on an IP network.
More Settings	Used to configure the IP address of the PC where a notification should be displayed in the event of an alarm.

Network configuration



Tab	Setting
General	Settings for the local network and selecting the network mode.
PPPOE	PPPOE is used with ADSL connections and when using a modem in Germany. Click on Change to enter the access data (user name and password) for your provider.

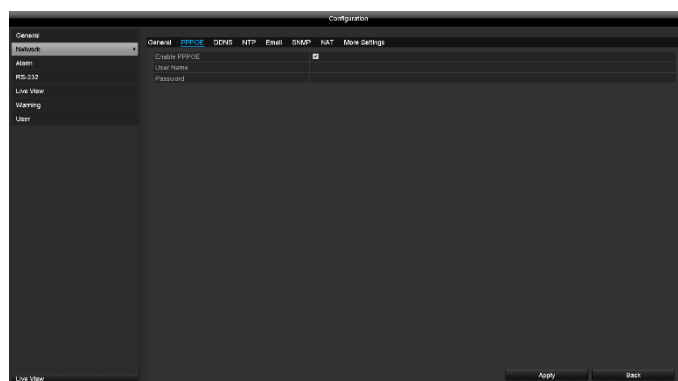
General tab

Parameter	Setting
NIC Type	Set the transmission speed of the integrated network card here. Tip: 10M/100M/1000M Self-adaptive.
DHCP	Tick the box if the IP addresses on the network are assigned dynamically via DHCP. DHCP enabled: subsequent entry fields are set to disabled because parameters are obtained via DHCP. Note: If the IP addresses are assigned manually, ensure that DHCP is not enabled (do not tick the box).
IPv4 Address	Address of the network device on the network when assigned manually.
IPv4 Subnet Mask	Usually 255.255.255.0.
IPv4 Default Gateway	Gateway address for internet access.
IPv6 Address 1	Local (link local) IPv6 address.
IPv6 Address 2	Global (global unicast) IPv6 address.
IPv6 Default Gateway	IPv6 gateway address for internet access.
MAC Address	Hardware address of the integrated network card.
MTU(Bytes)	Describes the maximum protocol packet size.
Preferred DNS Server	Address of the domain name server, usually the IP address of the gateway.
Alternate DNS Server	IP address of the alternative DNS server.
Report network interruption	Box ticked: Acoustic alarm in the event of a network interruption.

**Note**

In certain modes some of these settings cannot be selected.

PPPOE tab

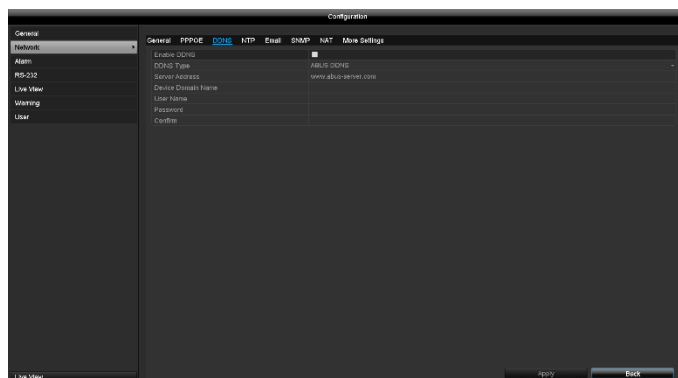


1. Tick the "Enable PPPOE" box. Then enter your user name (internet access ID) and password and confirm your password.
2. Apply the data by clicking on **Apply**.

**Warning**

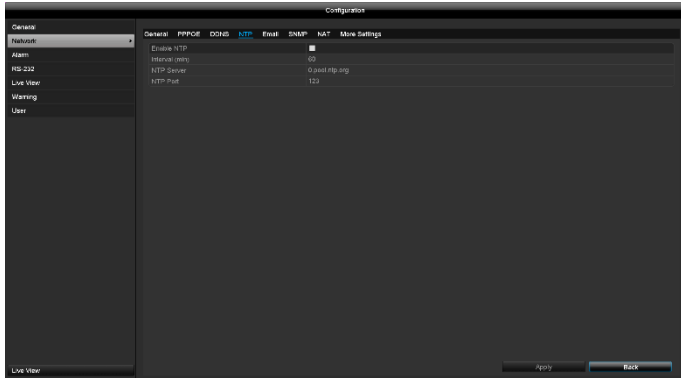
If possible, only use PPPOE when no router is available.

DDNS tab



1. To be able to use the ABUS DDNS function, you first need to set up an account at www.abus-server.com. Please read the FAQs on this topic on the website.
2. Tick the "Enable DDNS" box. Then select "DynDNS" as the DDNS Type and enter the www.abus-server.com IP address in the "Server Address" field.
3. Apply the data by clicking on **Apply**. The IP address of your internet connection is now updated on the server every minute.

NTP tab



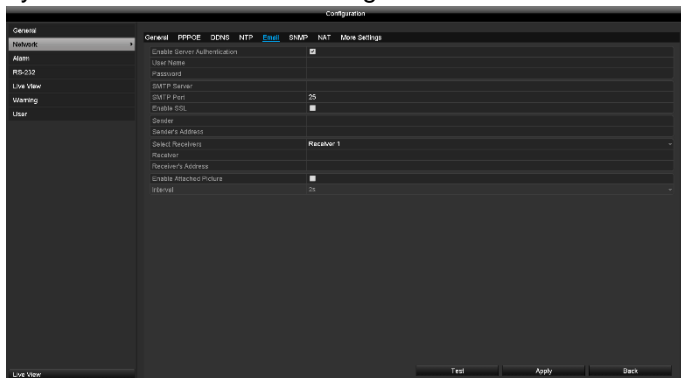
Note

The recorder can synchronise the time with an external server. Several server addresses are available on the internet for this purpose.

1. Tick the "Enable NTP" box and enter the interval after which synchronisation should be repeated. Enter the IP address of the NTP server and the NTP port.
2. Apply the data by clicking on **Apply**.

Email tab

In the event of an alarm, the device can send a message by email. Enter the email configuration here.



Sender's Address	The email address linked to the email account
Select Receivers	Select three potential recipients for the email
Receiver	Enter the name of the recipient here
Receiver's Address	Enter the email address of the recipient
Enable Attached Picture	Tick the box if camera recordings should also be sent with the email as photo files
Interval	Select a trigger time of between two and five seconds. The pictures will only be sent if motion is detected during the time frame defined.

1. Enter the parameters of the email notification.
2. Then click on **Test** to send a test email.
3. If you have entered everything correctly and have received a confirmation email, click on **Apply**.

Note

The device will send an email to the specified recipients.

If no email is received, check the settings and correct them where necessary.
If necessary, check the junk mail settings for your email client.

Note

You can obtain the access data and settings for sending SMTP from your email provider. Some email providers only provide SSL encryption for sending emails. This recorder has been tested for SSL compatibility with the following providers: GMX, Web.de and Gmail.

Parameter	Setting
Enable Server Authentication	Tick the box when logged onto the internet provider's server
User Name	Email account with the provider
Password	Password used to protect the email account
SMTP Server	SMTP server address of the provider.
SMTP Port	Enter the SMTP port (default: 25)
Enable SSL	Tick the box to enable email encryption
Sender	Name of the sender

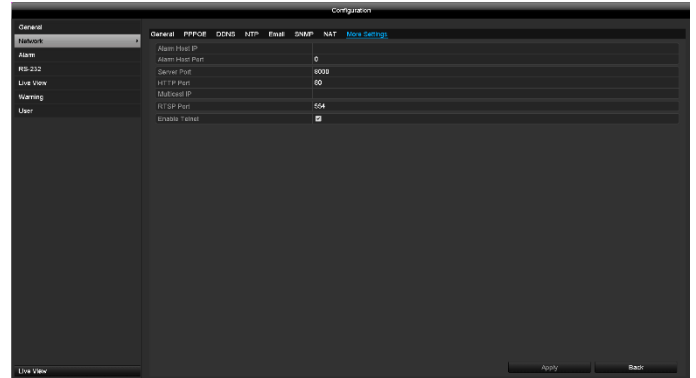
UPnP tab



Parameter	Setting
Enable UPnP	<p>Tick the box to enable visibility on an IP network. When this function is enabled, port forwarding is automatically entered in the router for all network ports (provided that UPnP is enabled in the router).</p> <p>If UPnP is enabled, the network ports configured by UPnP are transferred to the ABUS server (provided that ABUS DDNS is enabled).</p>
Mapping Type	<p>For "manual" settings, the network ports can be manually defined using the "Edit" button.</p> <p>For "auto" settings, the recorder checks for free network ports on the router and defines the port numbers in a random pattern.</p>

Confirm the settings by clicking on **Apply** and exit the menu by clicking on **Back**.

More Settings tab



Parameter	Setting
Alarm Host IP	Network address of the CMS station
Alarm Host Port	Port for your CMS station
Server Port	Port for data communication (default: 8000)
HTTP Port	Port for the web server (default: 80)
Multicast IP	You can enter the multicast IP here too in order to minimise traffic. The IP address must correspond to the one in the video surveillance software.
RTSP Port	Enter the RTSP port (Default: 554).

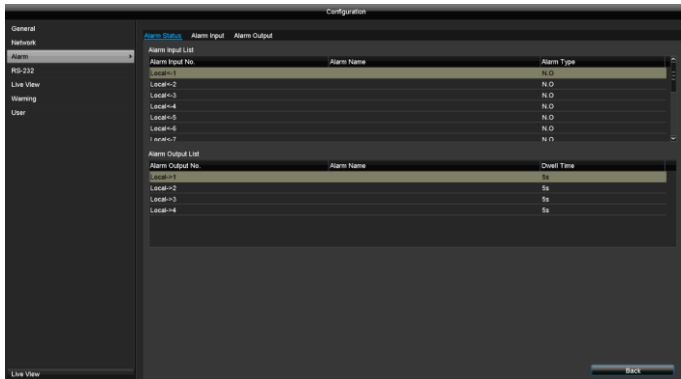


Note

Server port 8000 and HTTP port 80 are the standard ports for remote clients and remote internet browser access.

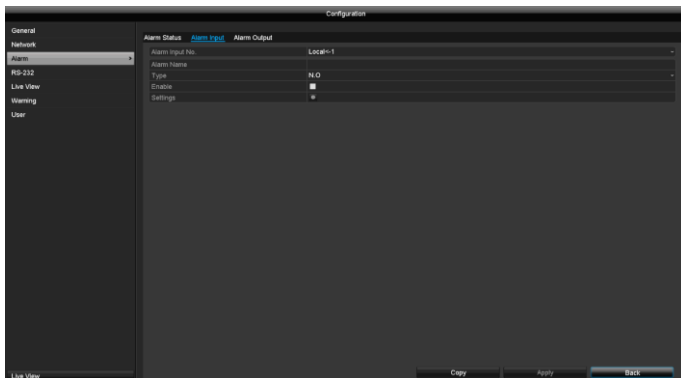
Alarm

Alarm Status tab



Here you can see a list of all the alarm inputs and outputs and their current status.

Alarm Input tab



Parameter	Setting
Alarm Input No.	Select the alarm input to adjust the settings.
Alarm Name	Enter a clear description, e.g. warehouse door contact.
Type	N.O.: normally open circuit N.C.: normally closed circuit

- Activate the alarm input by ticking the "Settings" box.
- Define the response of the recorder in the event of an alarm under "**Settings**".
- Click on **Copy** to apply these settings to other cameras.
- Confirm the settings by clicking on **Apply** and exit the menu by clicking on **Back**.

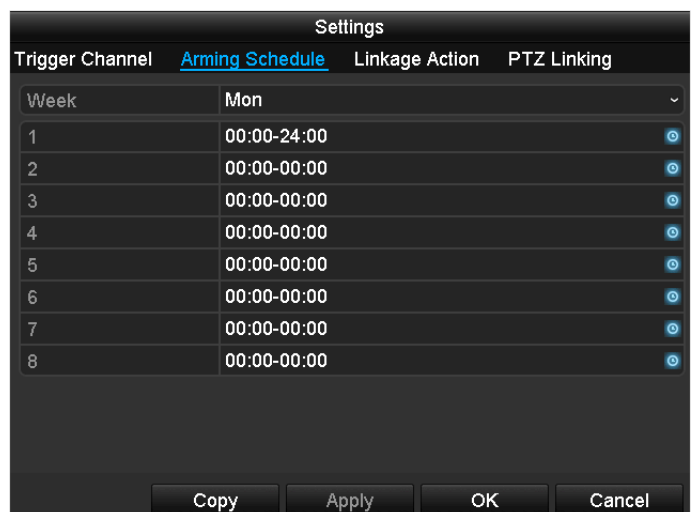
Settings

Trigger Channel tab



Tick the corresponding box to select which camera channel is triggered in the event of an alarm.

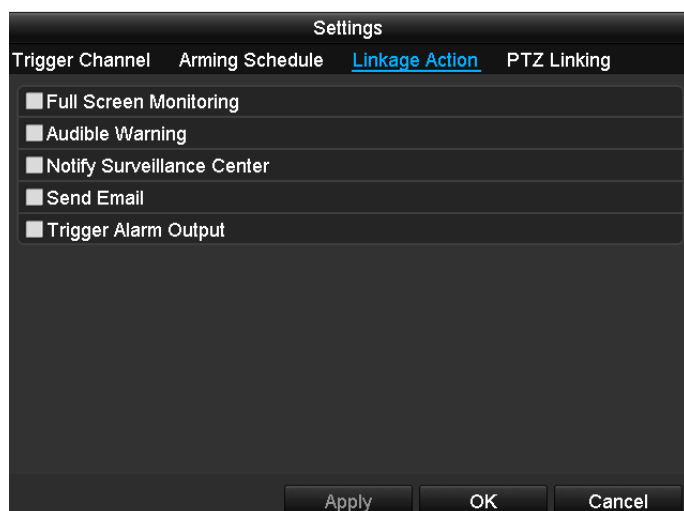
Arming Schedule tab



- Define the time at which the responses selected in the "Reaction" tab are activated when there is an alarm.
- Click on "Copy" to apply these settings to other days of the week or the entire week.

Linkage Action tab

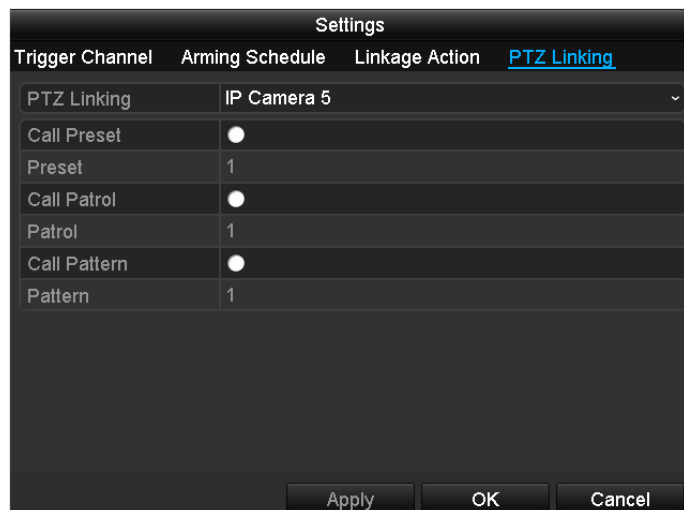
Select the **Linkage Action** tab. Here you can configure the response of the recorder in the event of an alarm by ticking the corresponding box.



Parameter	Notifications
Full Screen Monitoring	The camera is displayed in full screen in live view.
Audible Warning	The device emits a repeated signal tone.
Notify Surveillance Center	The CMS emits an audible warning tone.
Send Email	An email is sent to a specified email address. See page 29.
Trigger Alarm Output	The alarm output is triggered in the event of an alarm.

PTZ Linking tab

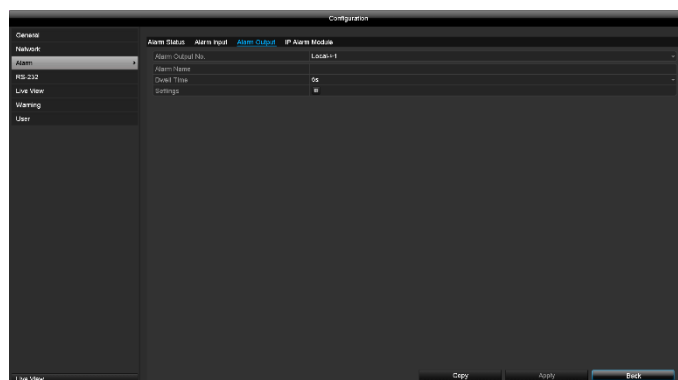
Here you can control specific PTZ presets, patrols or patterns for a taught-in camera.



Parameter	Notifications
PTZ Linking	Select the camera to be controlled using a PTZ command in the event of an alarm.
Call Preset	Select the preset number.
Start patrol	Select the patrol number.
Call Pattern	Select the pattern number.

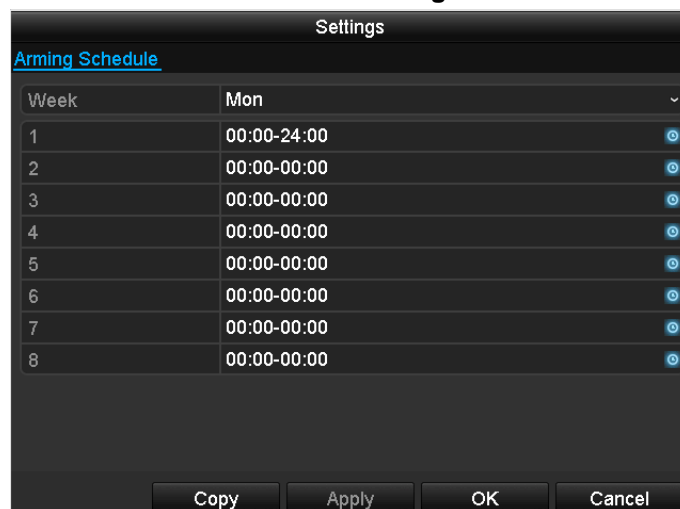
- Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Alarm Output tab



Parameter	Setting
Alarm Output No.	Select the alarm output to adjust the settings.
Alarm Name	Enter a clear description, e.g. warehouse door contact.
Dwell Time	Select the dwell time for switching the alarm output.

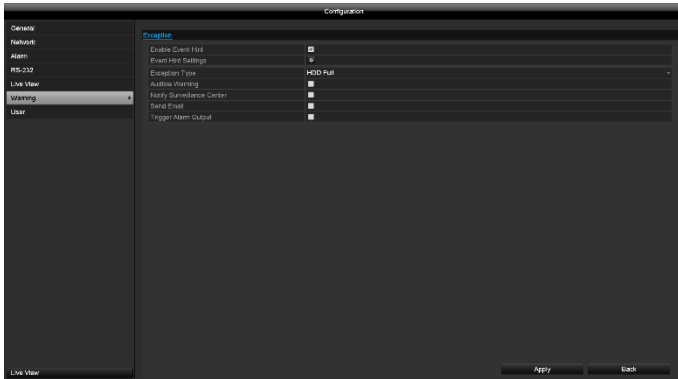
- Activate the alarm output by ticking the "Settings" box.
- Define the schedule for the recorder alarm output in the event of an alarm under **"Settings"**.



- Click on **Copy** to apply these settings to other cameras.

- Confirm the settings by clicking on **Apply** and exit the menu by clicking on **Back**.

Warning



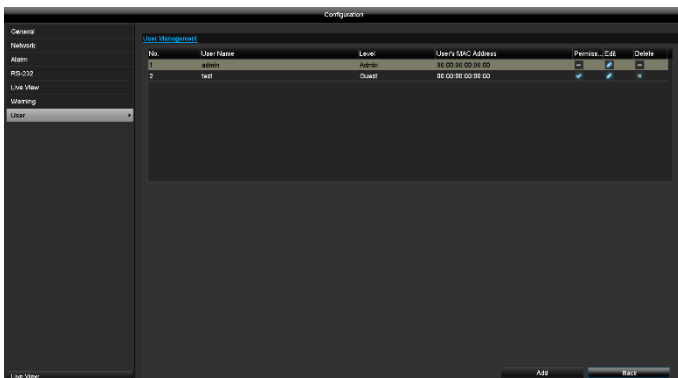
Set the response of the recorder for warning messages and system events here. To do this, activate the "Enable Event Hint" setting.

You can trigger a warning for the following error types:

- HDD Full
- HDD Error
- Network Disconnected
- IP Conflicted
- Illegal Login
- Exception Error

Parameter	Notifications
Audible Warning	The device emits a repeated signal tone.
Notify Surveillance Center	A notification is sent to the CMS software event log.
Send Email	An email is sent to a specified email address.
Trigger Alarm Output	The selected alarm output is switched in the event of a fault.

User



Warning

Note down the admin password.

The preset password is:

"1 2 3 4 5".

In user management, you can add new users, delete users, and amend existing settings.

- To add a new user, select **Add**.

Parameter	Setting
User Name	Unique identification
Password	Access code for the device, for the purpose of device management. Note: change your passwords regularly, using a combination of letters and numbers etc. and note them down to be stored in a safe place.
Confirm	Enter the access code again for security.
Level	IMPORTANT: More rights can be set on the Operator level than on the Guest level.
User's MAC Address	MAC address of the network adapter of the PC used by the corresponding user. Note: This limits access to the PC, for which the MAC address has been entered here.

- Enter the name and password and confirm the password in the field below.
- Select the level and enter the MAC address.
- Confirm the settings by clicking on OK.

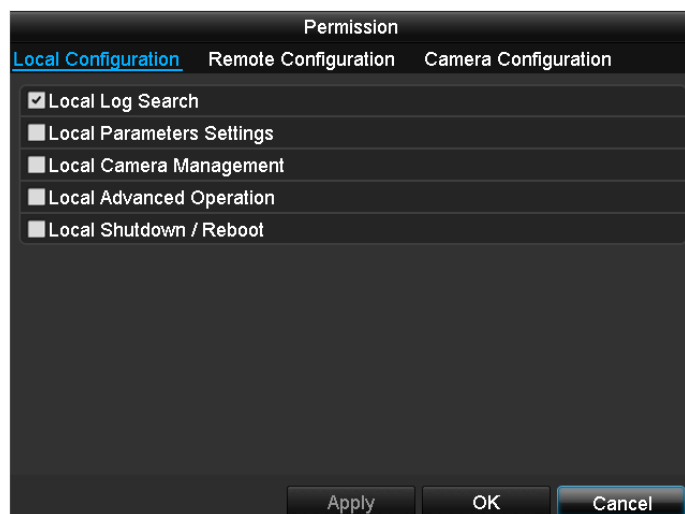


Warning

Follow the instructions below on assigning access rights.

Setting permissions

Control the access permission of the user by clicking on the "Permission" icon. Only the access data of users added manually can be changed:



Warning

Change the general settings of the user (name, password, level, MAC address) by clicking on the "Edit" icon or in the "Change Password" tab.



Note

The user can adjust the settings locally, i.e. on the device, or change the parameters.

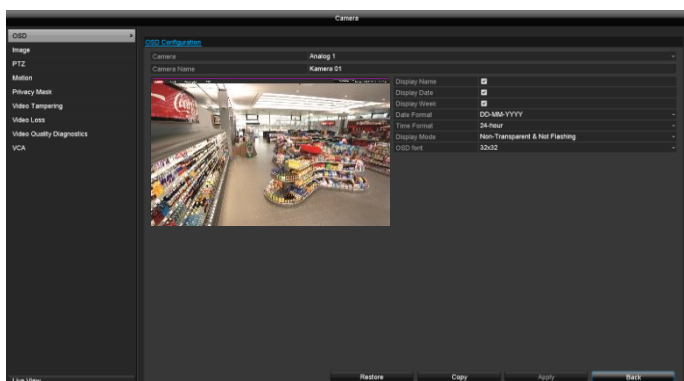
The user can access the device via the network connection.

Settings relating to permission to access individual cameras (via the network or locally) can be found in the Camera tab.

Parameter	Setting
Local Configuration	Local Log Search Local Parameters Settings Local Camera Management Local Advanced Operation Local Shutdown/Reboot
Remote Configuration	Camera Permission: Remote Log Search Remote Parameters Settings Remote Camera Management Remote Video Output Control Two-way Audio Remote Alarm Control Local Advanced Operation Remote Reboot
Camera Configuration	Camera Permission: Remote Live View Local Manual Operation Remote Manual Operation Local Playback Remote Playback Local Video Export

Camera

OSD



Select the camera channel to be processed under "Camera".

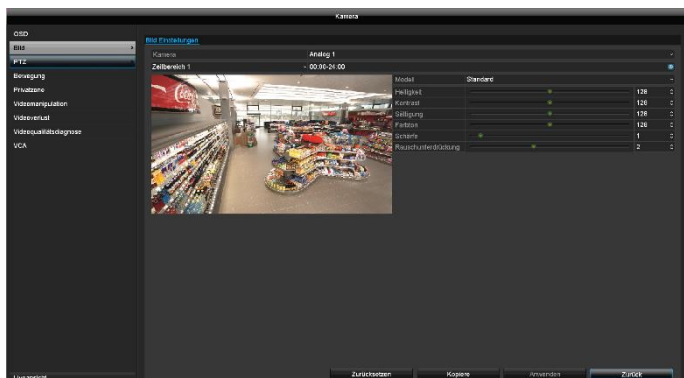
Parameter	Setting
Camera	Selection of the camera channel to be processed
Time segments	The image settings can be set to two different time segments per camera (e.g. day/night). Time Segment 2 is only available if an adjustment is being carried out to Time Segment 1.
Mode	Preset for indoor, low light conditions and outdoor.
Brightness	Value between 0 and 255
Contrast	Value between 0 and 255
Saturation	Value between 0 and 255
Hue	Value between 0 and 255
Sharpness	Value between 0 and 15
Noise reduction	Value between 0 and 5

All image adjustments are made locally on the recorder (recorder signal input). Dependent on the camera model, additional image adjustments are carried out in the camera OSD.

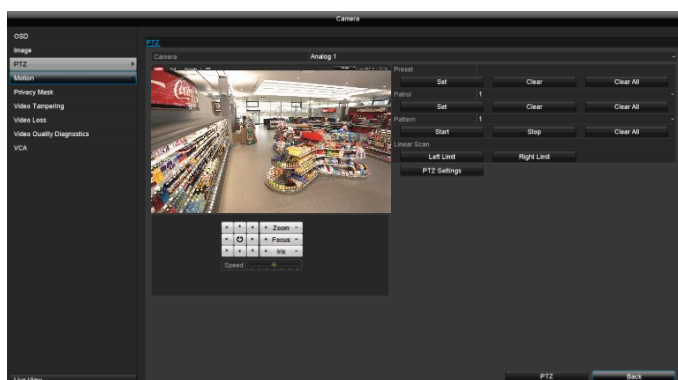
Select the camera channel to be processed under "Camera". Parameter	Setting
Camera	Selection of the camera channel to be processed
Name	Allocation of camera name
Display Name	Activate/deactivate display of camera name in the live view
Display Date	Activate/deactivate display of date in the live view

Display Week	Display the calendar week for the playback search
Date Format	Select the display format for the date of the playback search
Time Format	Select the display format for the time of the playback search
Display Mode	Settings for displaying the camera name and date
OSD font	Selection of font size

Image



PTZ



Select the camera channel to be processed under "Camera". When an analogue HD PTZ camera is being used, the control signals are transferred directly via the BNC cable. A two-core connection is only required for analogue PTZ cameras.

Select the camera channel to be processed under "Camera". The following actions are programmable:

Presets	Saving of individual preset positions.
Patrol	Saving of patrols.
Pattern	Saving of motion pattern.
Linear scan.	Horizontal scan.

Saving and retrieving presets

1. Use the arrow keys to navigate the camera to the desired image section.
2. Save the preset position by selection of a preset number in the Preset input field. Input the desired number via the keypad and press the "Set" button in the Preset menu.
3. Click on the "PTZ" button and in the "General" tab, select the position on the keypad. Press the "Call Preset" button to go to the saved Presets

Setting up and calling up patrols

1. Create several presets to use for the patrol
2. Click on "Set" to configure the patrol. Define a preset with dwell time and speed for each key point.
3. Add more presets to set up the required patrol.
4. Click on the "PTZ" button and in the "General" tab, select the position on the keypad. Press the "Call Patrol" button to go to the saved patrol.

Saving and retrieving a pattern

1. Start the recording by pressing the "Start" button.
2. Use the arrow keys to navigate the camera to the desired image sections and positions.
3. Save the recording by pressing the "Stop" button.
4. Click on the "PTZ" button and in the "General" tab, select the position on the keypad. Press the "Start Pattern" button to go to the saved pattern.

Linear scan

1. Use the arrow keys to navigate the camera to the desired image sections and positions.
2. Press the "Left Limit" button to define the maximum horizontal value.
3. Click on the "PTZ" button and in the "General" tab, select the position on the keypad. Press the "Start Pattern" button to go to the saved pattern.

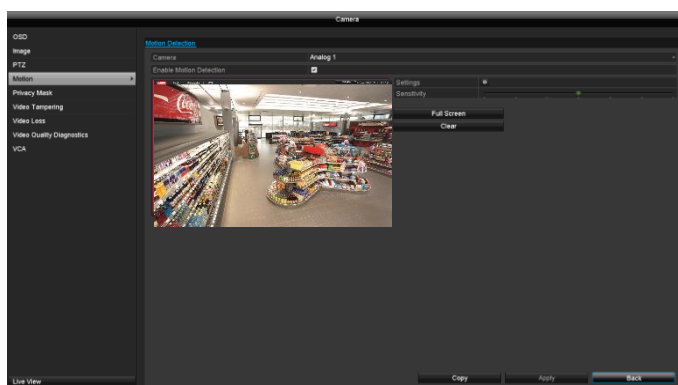
PTZ Settings

The protocol settings for the PTZ camera can be set here. When using an HD TVI camera, the settings are

automatically detected. Protocol for HD TVI is ABUS-C (Coaxitron). Select another protocol when using an analogue PTZ camera.

Parameter	Setting
Camera	Select the camera channel
Baud Rate	Define the transmission rate
Data Bit	Standard 8
Stop Bit	Standard 1
Parity	No standard
Flow Ctrl	No standard
PTZ Protocol	Select the PTZ protocol
Address	Select the camera ID

Motion



Select the camera channel to be processed under "Camera".

Put a tick by Motion Detection and with the mouse drag one or more windows for the detection zone. Alternatively, by pressing the "Full Screen" button, the whole picture area for motion detection can be marked.



Note

To record with the aid of motion detection, you must set up the schedule under **Record**.

When there are pixel changes in live view, motion detection activates the camera. By setting the "**Sensitivity**" slider, the resolution pattern can be adapted for each individual camera.

Trigger Channel

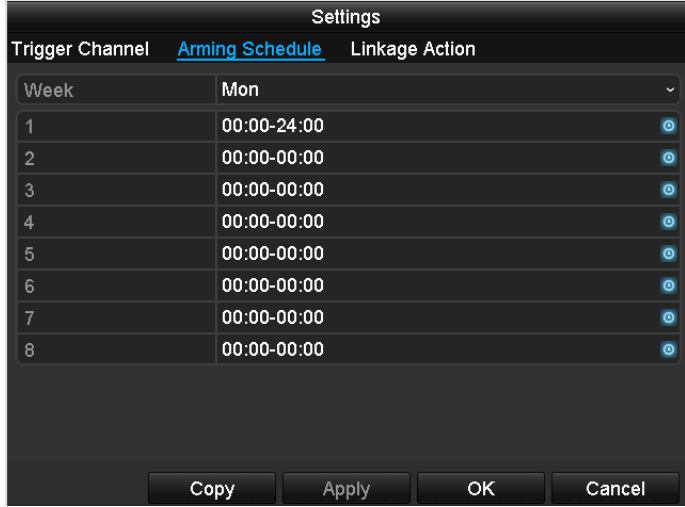
When you click on "Settings", the **Trigger Channel** tab will appear (only for motion detection):



Select one or more camera channel(s) to react in the event of an alarm.
Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Arming Schedule

Select the **Arming Schedule** tab.
Here you set the times at which the reactions set in the **Linkage Action** tab are triggered.

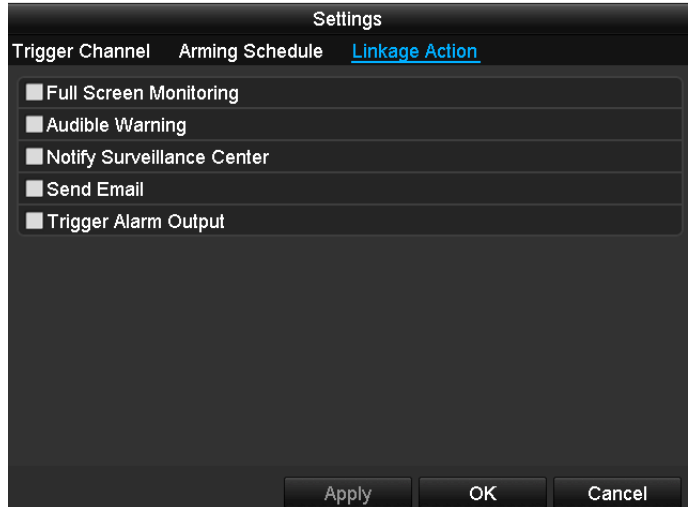


- Select the day and enter the schedule.
- Note**

You can define up to eight time slots, between 00:00 and 00:00 in each case, but the individual time slots must not overlap.
- Under **Copy**, select whether or not the setting should be applied to every day of the week and the holiday settings.
 - Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Linkage Action

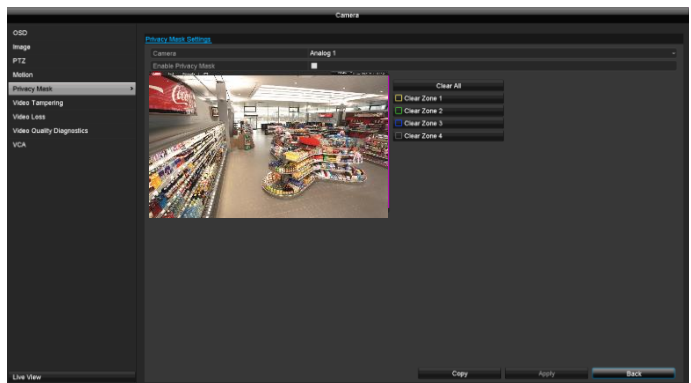
Select the **Linkage Action** tab.
Here you can configure the response of the recorder in the event of an alarm by ticking the corresponding box.



Parameter	Notifications
Full Screen Monitoring	The camera is displayed in full screen in live view.
Audible Warning	The device emits a repeated signal tone.
Notify Surveillance Center	The CMS sends out a warning message.
Send Email	An email is sent to a specified email address. See page 29.
Trigger Alarm Output	The alarm output is triggered in the event of an alarm.

- Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Private Zone



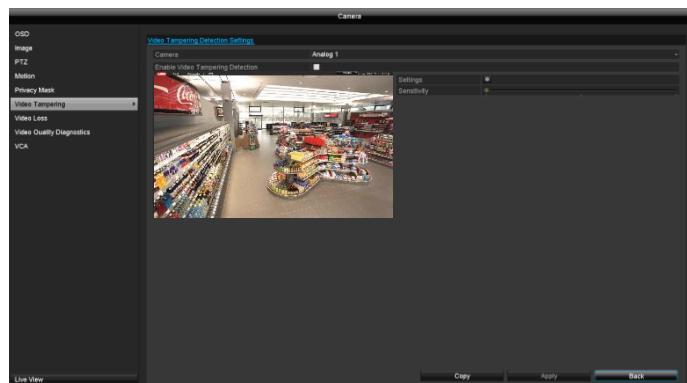
Select the camera channel to be processed under "Camera".

Select the checkbox for activating the **private zone**.

Up to four private zones can be defined per camera. These are created by drawing the zones with the mouse in the preview image.

Using "Clear All", all zones are reset simultaneously. Alternatively, the zones can be cleared individually with the buttons.

Video Tampering



Select the camera channel to be processed under "Camera".

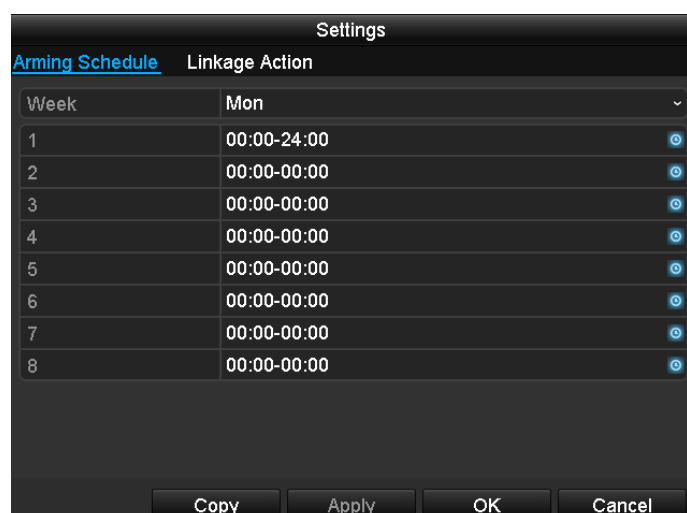
Tick the "**Enable Video Tampering Detection**" box and define any other optional parameters under "**Settings**".

The sabotage alarm is activated if there is any tampering with the camera lens (sharpness, dimming).

Arming Schedule

Select the **Arming Schedule** tab.

Here you set the times at which the reactions set in the **Linkage Action** tab are triggered.



1. Select the day and enter the schedule.

Note

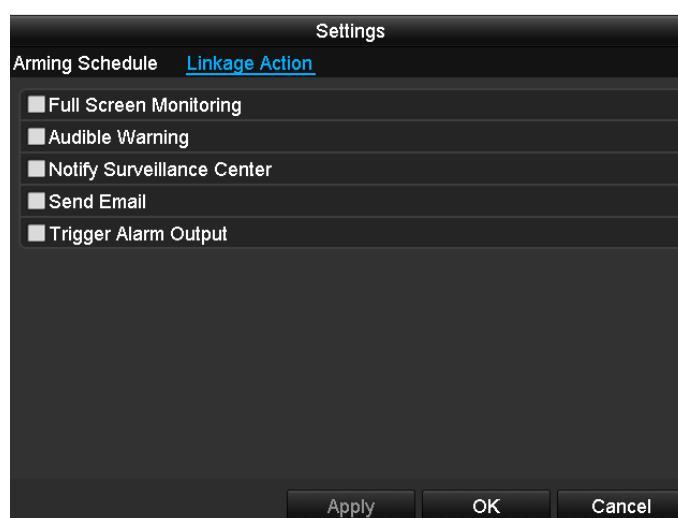
You can define up to eight time slots, between 00:00 and 00:00 in each case, but the individual time slots must not overlap.

2. Under **Copy**, select whether or not the setting should be applied to every day of the week and the holiday settings.
3. Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Linkage Action

Select the **Linkage Action** tab.

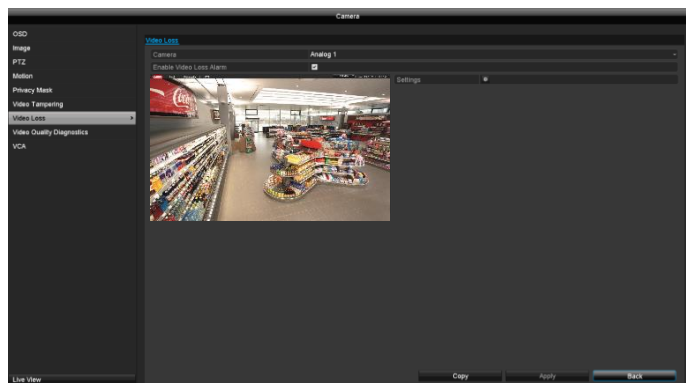
Here you can configure the response of the recorder during an event (e.g. motion detected) by ticking the corresponding box.



Parameter	Notifications
Full Screen Monitoring	The camera is displayed in full screen in live view.
Audible Warning	The device emits a repeated signal tone.
Notify Surveillance Center	The CMS sends out a warning message.
Send Email	An email is sent to a specified email address. See page 29.
Trigger Alarm Output	The alarm output is triggered in the event of an alarm.

Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Video Loss



Select the camera channel to be processed under "Camera".

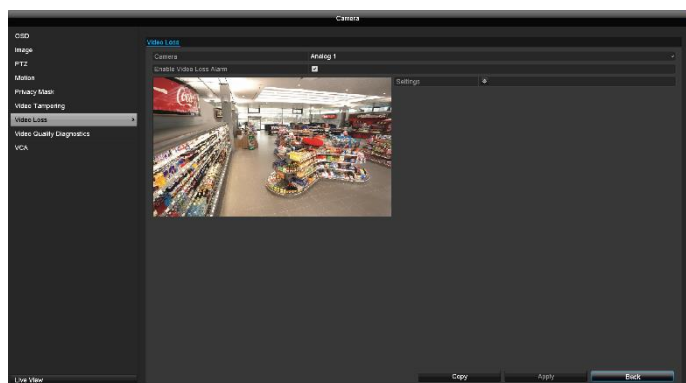
Tick the **Enable "Video Loss" Alarm** box and define any other parameters under **"Settings"** as required.

The Video Loss alarm is activated when there is complete camera failure.

Arming Schedule

Select the **Arming Schedule** tab.

Here you set the times at which the reactions set in the **Linkage Action** tab are triggered.



1. Select the day and enter the schedule.



Note

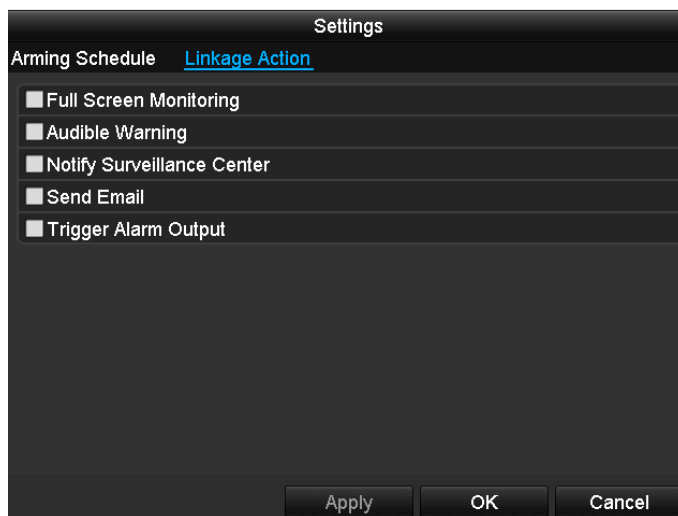
Up to eight time slots, between 00:00 and 00:00, can be defined in each case, but the individual time slots must not overlap.

2. Under **Copy**, select whether or not the setting should be applied to every day of the week and the holiday settings.
3. Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Linkage Action

Select the **Linkage Action** tab.

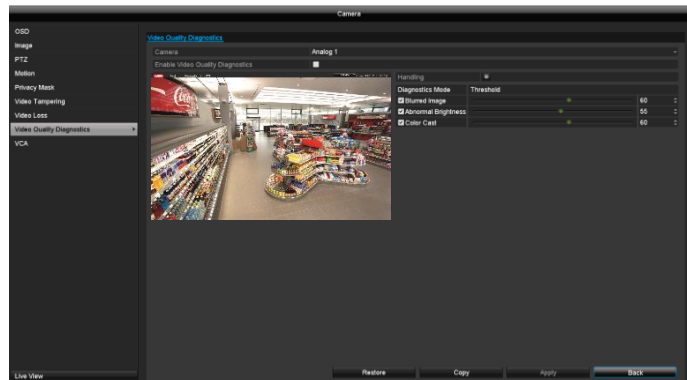
Here you can configure the response of the recorder during an event (e.g. motion detected) by ticking the corresponding box.



Parameter	Notifications
Full Screen Monitoring	The camera is displayed in full screen in live view.
Audible Warning	The device emits a repeated signal tone.
Notify Surveillance Center	The CMS sends out a warning message.
Send Email	An email is sent to a specified email address.
Trigger Alarm Output	The alarm output is triggered in the event of an alarm.

Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Videoquality diagnostics



Select the camera channel to be processed under "Camera".

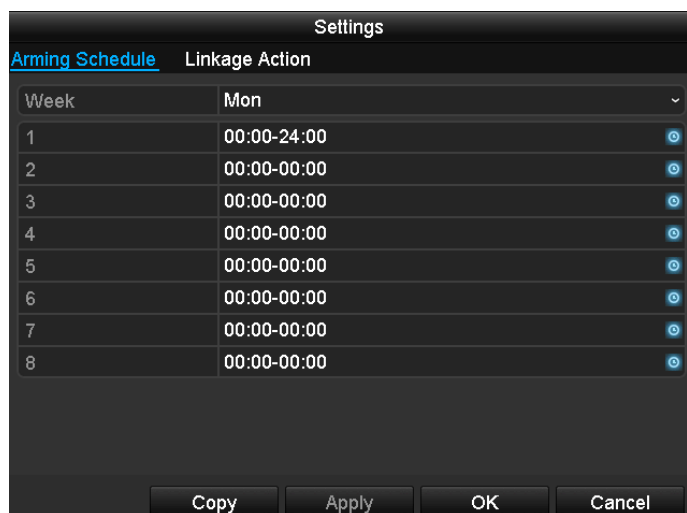
Tick the **"Enable Video Quality Diagnostics"** box and define any other optional parameters under **"Settings"**.

Video Quality Diagnostics is activated if the limits in the camera image for image sharpness, brightness and colour are exceeded. The limits can be set using the scroll bar. The lower the value, the sooner an alarm is detected.

Arming Schedule

Select the **Arming Schedule** tab.

Here you set the times at which the reactions set in the **Linkage Action** tab are triggered.



1. Select the day and enter the schedule.



Note

You can define up to eight time slots, between 00:00 and 00:00 in each case, but the individual time slots must not overlap.

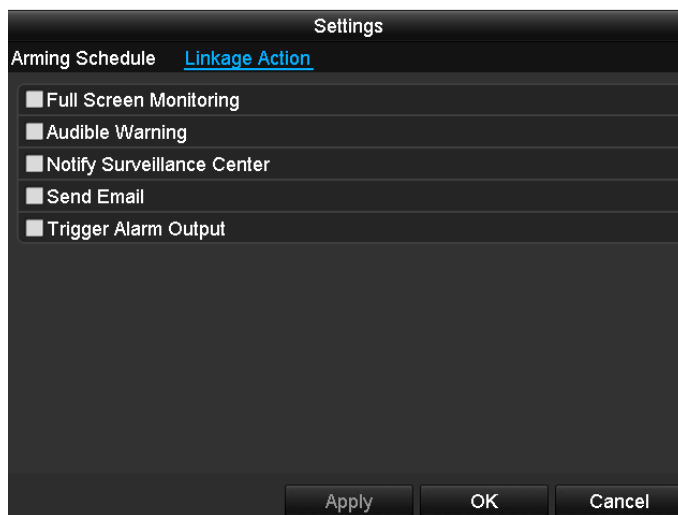
2. Under **Copy**, select whether or not the setting should be applied to every day of the week and the holiday settings.

3. Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Linkage Action

Select the **Linkage Action** tab.

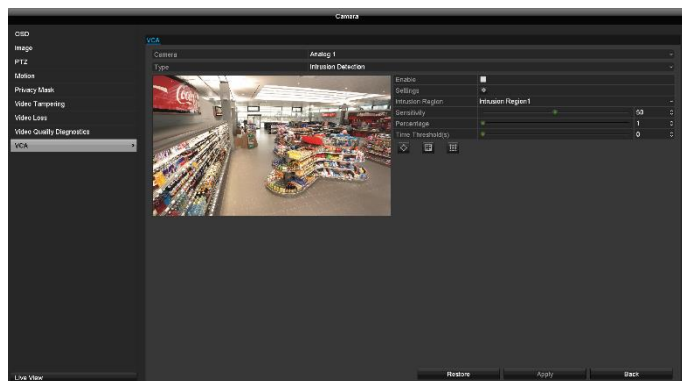
Here you can configure the response of the recorder during an event (e.g. motion detected) by ticking the corresponding box.



Parameter	Notifications
Full Screen Monitoring	The camera is displayed in full screen in live view.
Audible Warning	The device emits a repeated signal tone.
Notify Surveillance Center	The CMS sends out a warning message.
Send Email	An email is sent to a specified email address. See page 29.
Trigger Alarm Output	The alarm output is triggered in the event of an alarm.

• Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

VCA



You can choose between two VCA functions under "Type". VCA (Video Content Analysis) enables object-based detection of video content, providing greater functionality than conventional motion detection.

**Note**

A maximum of two video channels can be configured for VCA.

VCA detection is activated if an object that corresponds to the analysis parameters (direction or dwell time) is detected.

Setting up Tripwire Detection

This function can be used to detect people, vehicles or other moving objects that cross a virtual line. The lines can be configured exclusively for one particular direction or bidirectionally for both directions.

Select the camera channel to be processed under "Camera".

Under Type, select "**Tripwire Detection**" and select "Enabled" to configure the VCA analysis for the channel. Define additional parameters under **Settings** as required.

Parameter	Setting
Line	Up to four lines can be defined per camera. Create the lines using [ICON] by determining a start and an end point in the preview image. Clear the lines using the [ICON] button.
Direction	Direction detection for the analysis function can be determined here. The following setting not possible: A<->B: Detection if an object crosses the line from both

directions.

A->B: Detection if an object crosses the line from A to B.

B->A: Detection if an object crosses the line from B to A.

Sensitivity	Set the percentage here. The higher the value set, the smaller the objects detected (this can lead to false alarms, however).
-------------	---

Setting up Intrusion Detection

This function can be used to detect people, vehicles or other moving objects that remain in a particular image area within a defined period.

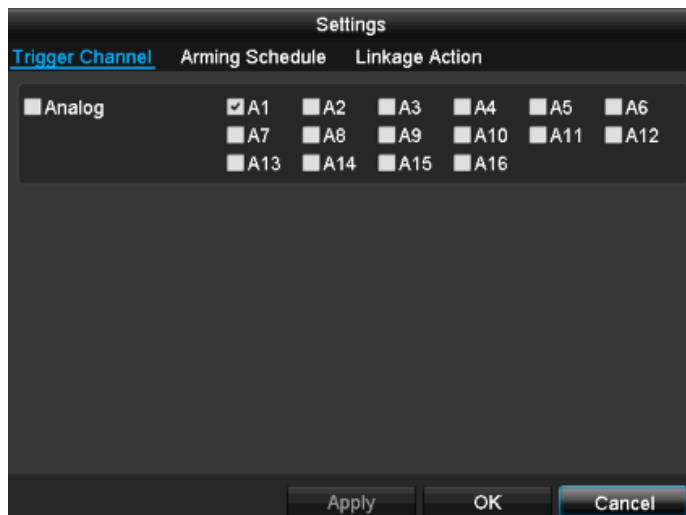
Select the camera channel to be processed under "Camera".

Under Type, select "**Intrusion Detection**" and select "Enabled" to configure the VCA analysis for the channel. Define additional parameters under **Settings** as required.

Parameter	Setting
Intrusion Region	Up to four Intrusion Regions can be defined per camera. An Intrusion Region can be generated using [ICON] by defining four points in the preview image. Alternatively, the complete screen area can be set using the [ICON] button. Clear the region using the [ICON] button.
Sensitivity	Here, the sensitivity can be set between 1–100. The higher the value set, the sooner objects are detected.
Percentage	Defines what percentage of the defined region must change to detect an object. If the value is at 50, then 50% of the region must continuously change to trigger an alarm.
Dwell time	Defines how long (in seconds) the object may remain in the region until an alarm is signalled.

Trigger Channel

When you click on "Settings", the **Trigger Channel** tab will appear.

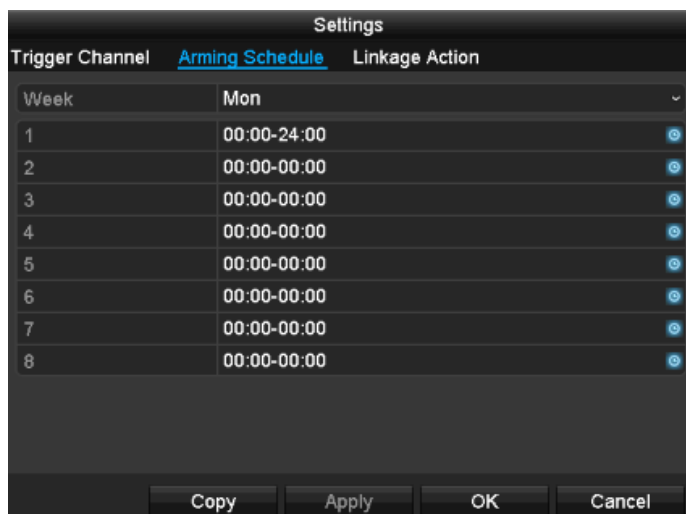


Select one or more camera channel(s) to react in the event of an alarm.
Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Arming Schedule

Select the **Arming Schedule** tab.

Here you set the times at which the reactions set in the **Linkage Action** tab are triggered.



1. Select the day and enter the schedule.



Note

You can define up to eight time slots, between 00:00 and 00:00 in each case, but the individual time slots must not overlap.

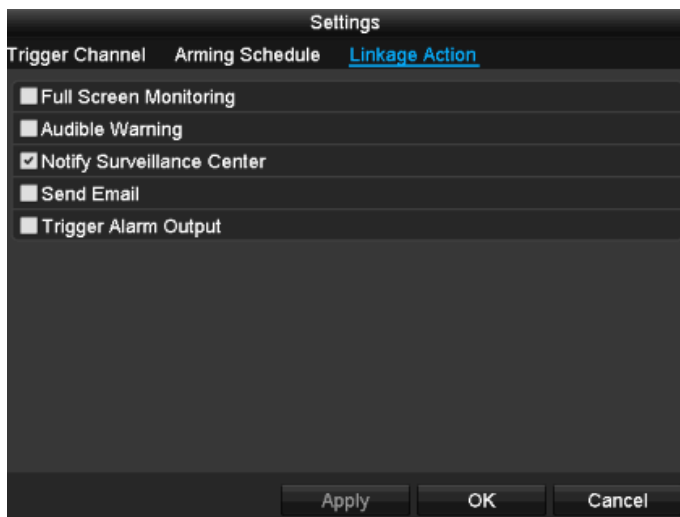
2. Under **Copy**, select whether or not the setting should be applied to every day of the week and the holiday settings.

3. Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Linkage Action

Select the **Linkage Action** tab.

Here you can configure the response of the recorder during an event (e.g. motion detected) by ticking the corresponding box.



Parameter	Notifications
Full Screen Monitoring	The camera is displayed in full screen in live view.
Audible Warning	The device emits a repeated signal tone.
Notify Surveillance Center	The CMS sends out a warning message.
Send Email	An email is sent to a specified email address. See page 29.
Trigger Alarm Output	The alarm output is triggered in the event of an alarm.

- Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

Recording

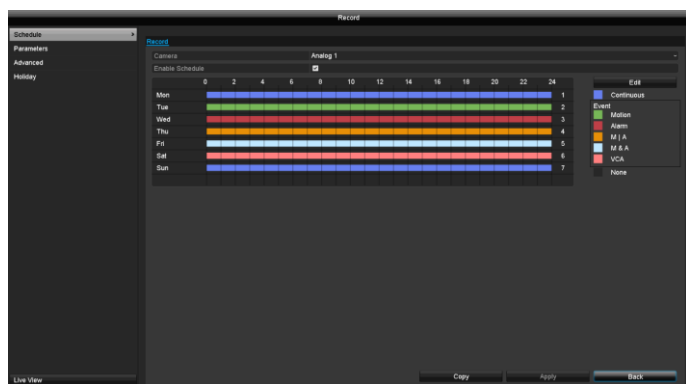
Schedule

Open the main menu and click on Record. The following configuration is available for data recording.

Recording	Configuration of video stream recording from connected cameras. Continuous data streams are saved on the recorder.
-----------	--

Record tab

The schedule is used to specify the recording times and triggers (recording type) for the cameras.



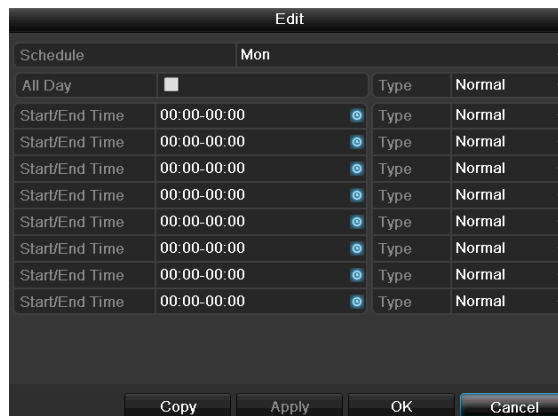
On the on-screen display, the hours for each day are listed from left to right, and the days are listed from top to bottom. On the right of the display, the colour key can be seen so, in the time schedule set up, the recording periods are displayed in the schedule in a different colour depending on the 'trigger' (recording type) in question.

	Key	Trigger
	Continuous recording	Schedule
	Motion detection	Motion detection of the camera
	Alarm	Alarm Input
	Motion or alarm	Camera motion detection or alarm input
	Motion and alarm	Camera motion detection and alarm input simultaneous.
	VCA	VCA alarm
	No selection	No recording

- Select the camera and tick the **Enable Schedule** box.

- Click on a **trigger** and use your mouse to highlight the time period within the schedule.

Alternatively, click on **Edit** to configure the type and duration of the schedule down to the minute.



1. In the drop-down menu for "Schedule", select the day to be set.
2. Activate/deactivate "All Day". If "All Day" is activated, you cannot enter specific times as the setting now applies to the whole day.
3. If you wish to enter specific time settings, deactivate "All Day".



Application example

If you want recording to run from 11:00 to 07:00, you need to set up two time zones:

1. 11:00–24:00
2. 00:00–07:00

4. Specify the recording type in the drop-down menu for "Type":

- Normal
- Motion
- Alarm
- Motion or alarm
- Motion and alarm

Note

For "Normal", you define the time period for recording.

The other triggers, such as motion detection, only trigger recording when the specific trigger has occurred.

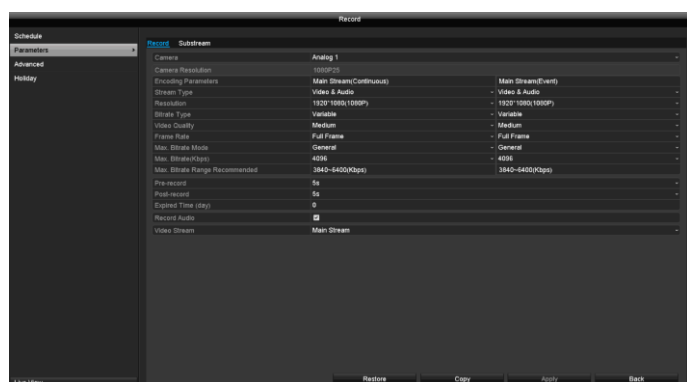
5. If you are entering time-dependent settings, you can define up to eight time slots, between 00:00 and 00:00 in each case, but the individual time slots must not overlap.

- Click on **Copy** to apply these settings to other days or the entire week.

Finalise your settings on the record screen by clicking on **Apply** and then **OK**.

Stream settings

"Stream settings" is where the quality settings for the individual video streams are set up on the recorder.



Note

If it is not possible to change the advanced settings for resolution and bit-rate, this means that the current recorder firmware does not support this function.






There are two types of configuration available:

Recording	Quality settings for continuous and event-based recording.
Substream	Quality settings for the substream, which is used mainly for the live image display.

Record tab

The following setting options are available in this submenu:

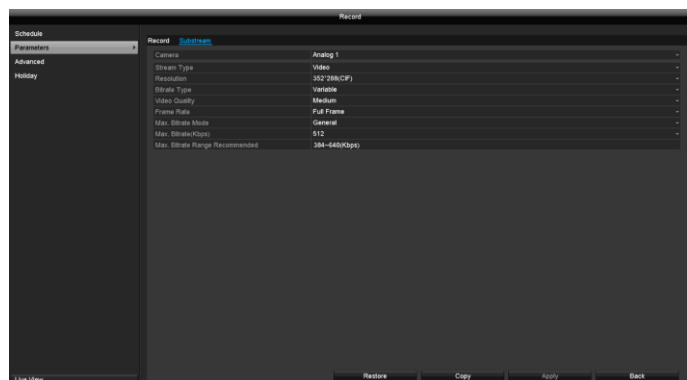
Parameter	Setting
Camera	Camera to be set
Encoding Parameters	Stream to be set (continuous and event)
Stream Type	Predefined video stream
Resolution	Resolution of the camera
Bitrate	Select a variable or constant bitrate
Video Quality	There are various quality levels: +++ : medium quality +++++ : high quality
Frame Rate	Settings for the stream frame rate
Max. Bitrate Mode	Select the mode for setting the bitrate Custom (32–3072)
Max. Bitrate(Kbps)	Settings for the maximum bitrate
Max. Bitrate Range Recommended	Recommended bit rate depending on the set resolution, frame rate etc.
Pre-record	Recording period before an alarm (in seconds)
Post-record	Recording period after an alarm (in seconds)
Expired Time (day)	Setting for the maximum retention time for recorded files
Record Audio	Box ticked: recording with audio data
Video Stream	Stream type allocated for recording

Dependent upon the programming, the recorder can record at differing quality levels. The setting "Main Stream (Continuous)" is used exclusively for continuous recording . The setting "Main Stream (Event)" is used for all recordings for the events    .

**Note**

If an event-supported recording is being configured, the best possible setting in respect of memory usage is if only events are recorded in high quality.

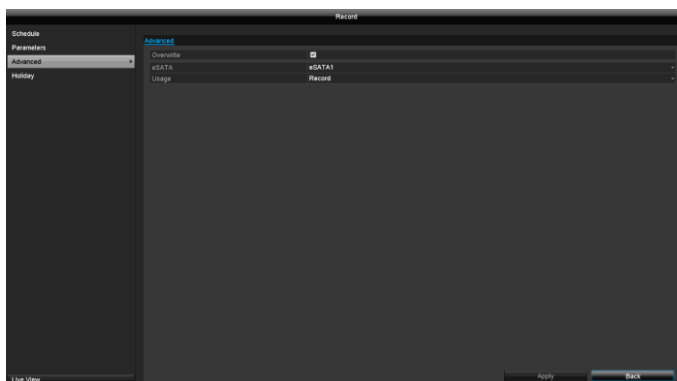
Confirm the settings by clicking on **Apply** and exit the menu by clicking on **Back**.

Substream tab

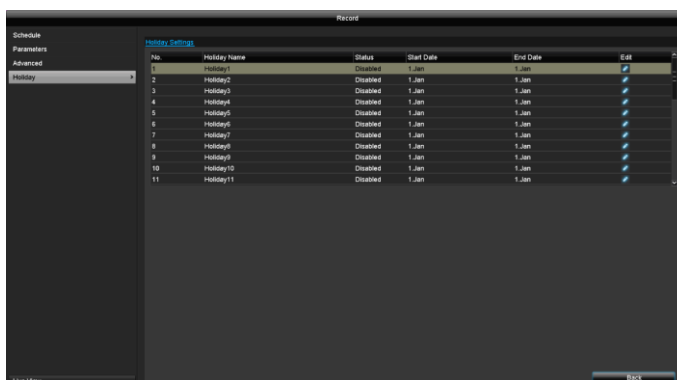
The following parameters can be set:

Parameter	Setting
Camera	Camera to be set
Stream Type	Predefined video stream
Resolution	Auto, 4CIF(704x576), CIF(352x288), QCIF(176x144)
Bitrate Type	Select a variable or constant bitrate
Video Quality	There are various quality levels: +++ : medium quality ++++++ : high quality
Frame Rate	Settings for the stream frame rate
Max. Bitrate Mode	General, custom (32–3072)
Max. Bitrate(Kbps)	Display of the maximum bitrate
Max. Bitrate Range Recommended	192–320 (Kbps)

Confirm the settings by clicking on **Apply** and exit the menu by clicking on **Back**.

Advanced

Overwrite	Specify whether older recordings should be overwritten when the hard disk drive is full.
eSATA	Quantity of eSATA connections that can be set.
Use	Setting the eSATA connections for recording or Video Export exclusively.

Holiday

In this submenu, there are 32 different recording settings for holidays or bank holidays.

Click on the "Edit" icon to apply these settings

Edit		
Holiday Name	Holiday1	
Enable	<input type="checkbox"/>	
Mode	By Month	
Start Date	Jan	1
End Date	Jan	1

Apply OK Cancel

Name	Manually enter the name of the holiday or bank holiday
Enable	Enable or disable the holiday set
Mode	By Date/By Week/By Month
Start Date	Select the start date/start time
End Date	Select the end date/end time

Confirm your settings by clicking on **Apply** and then **OK**.

**Note**

Configure the schedule after enabling the holiday function. Here a new line "Holiday" appears that can be configured in the same way as week days.

**Note**

The holiday schedule disables all week time schedules (Mon–Sun).

HDD

HDD



Note

The device can manage two 3.5" SATA hard disk drives.

The installed hard disk drives have to be initialised before the device can be used for recording. It is only then that the device will recognise the hard disk drive.



Warning

All data will be deleted from the hard disk drive during initialisation.

Ensure data is backed up promptly.

Installing the hard disk drive

1. Disconnect the device from the mains power and open the cover.
2. Follow the ESD guidelines when handling electronic devices and ensure that they are earthed.
3. Do not open the housing in rooms with carpets or other surfaces that may be electrostatically charged.
4. Avoid bodily contact with all components on the PCB.



Warning

If you have any questions about the instructions, or if the instructions do not help you, your specialist installation contractor will be more than happy to help.

5. Install the hard disk drive and establish the connections.
6. Reattach the housing and connect the device to the mains power supply.



Note

If the installed hard disk drive is not displayed, check the connections.

Click on "HDD" in the menu to adjust settings relating to management of the hard disk drive.

General

Edit

Holiday Name	Holiday1		
Enable	<input type="checkbox"/>		
Mode	By Month		
Start Date	Jan	1	
End Date	Jan	1	

Apply

OK

Cancel

HDD Information	Description
Label	Shows the internal connection number.
Capacity	Hard disk drive capacity (in GB).
Status	Shows the current status of the hard disk drives: Initialised Normal Error Standby
Property	<ul style="list-style-type: none"> Read-only: write protection R/W: read and write
Type	Local: device hard disk drive
Free Space	Shows the approximate amount of free memory for recordings
Group	Group ID
Edit	Edit HDD group setting (only available in group mode).
Delete	Removing the hard disk drive (only available for NetHDD).

Initialising the hard disk drive

1. Select the hard disk drive by ticking the box.
2. Click on **Init** to start the operation .
3. Click on **OK** to acknowledge the security prompt.
4. The status bar will show the progress of the initialisation.
5. Once the process has finished, the hard disk drive will appear.

Add NetHDD

Additional data storage devices can be added to enable storage across the network.



Warning

When using NetHDDs, ensure that your network is of a sufficient size.



Note

The playback of recorded data may be slower if you use NetHDDs than if you are using the internal hard disk drives.

Click on **Add** to add a NetHDD.

NetHDD	Choose from eight NetHDDs.
Type	NAS: For this setting, your network storage must support the NFS file system. IP SAN: For this setting, your network storage must support the iSCSI protocol.
NetHDD IP Address	Enter the network storage IP address.
NetHDD Directory	Enter the storage path or iSCSI target.

Click on **Search** to identify the network storage and then click on **OK** to add the NetHDD. The NetHDD must be initialised before use.

Advanced Settings

Here you can define the settings for the storage mode.

Mode: Quota

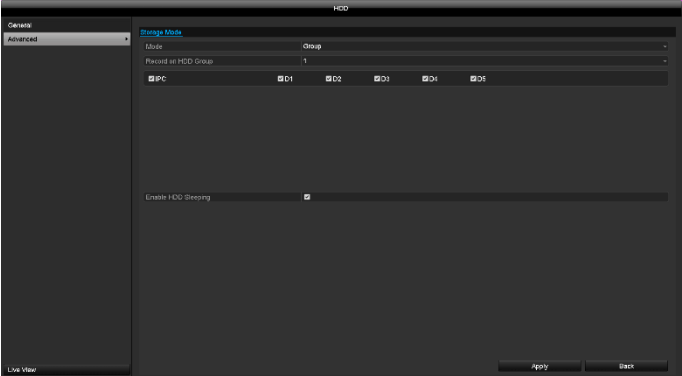
In this mode, video data is divided between the total number of data storage devices connected and written onto them.

Camera	Selection of the camera channel to be processed
Used Record Capacity	Video storage space currently in use on the linked data storage devices.
Used Picture Capacity	Picture storage space currently in use on the linked data storage devices.
HDD Capacity (GB)	Total available hard disk drive capacity (in GB).
Max. Record Capacity (GB)	Specify the maximum video recording size on the linked data storage devices for each camera.
Max. Picture Capacity (GB)	Specify the maximum picture recording size on the linked data storage devices for each camera.
Enable HDD Sleeping	When this function is activated, idle hard disk drives go into standby mode.

1. Use **Copy** to specify if the setting is to be applied to all cameras.
2. Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.


Mode: Group

In this mode, video data can be specifically (and also redundantly) stored on selected data storage devices.



Parameter	Setting
Record on HDD Group	Select HDD group.
Camera	Select which cameras should be stored in the group currently selected.
Enable HDD Sleeping	When this function is activated, idle hard disk drives go into standby mode.

Parameter	Description
HDD No.	Internal hard disk drive number for the recorder.
R/W	In this mode, video data is written onto the data storage device and can also be read (default setting).
Read-only	In this mode, no video data is written onto the data storage device. This setting is useful if you want to stop data from being overwritten after an event.
Redundancy	In this mode, video data is stored in parallel. All data storage devices with the R/W setting are also stored on all data storage devices with the "Redundancy" setting.
Group	Allocate the data storage device to an HDD group.

The HDD groups are configured in the General menu. To do this, click on  to open the HDD group settings.



Attention:
If only one hard disk drive is installed and this is set to "Read-only", the device cannot be used for recording.

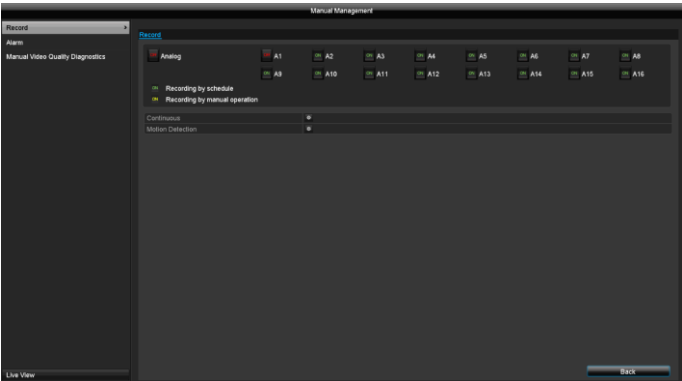
Panic recording

Recording

Press the REC button or navigate to **Manual Management** in the main menu to start manual picture/video recording.

If a recording is started manually, it also has to be stopped manually. All manual recordings will be deactivated when the recorder is rebooted.

Click on the "Record" submenu.



Select the settings for all cameras. Click on "Off" or "On" to change the settings.

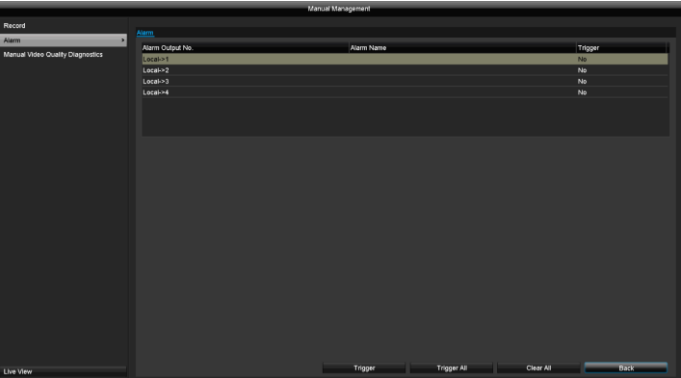
"On (green)" → "Off (red)"
Manually stop recording

"Off (red)" → "On (yellow)"
Manual continuous recording

"On (yellow)" → "Off (red)"
Manual continuous recording is stopped and if a schedule has been configured for the camera, it will be activated automatically (green).

Alarm

Here you can select the alarm output which should be switched in the event of manual management.



You can switch several alarm outputs in the event of a manual response.

Select **Trigger** to activate the selected alarm output.

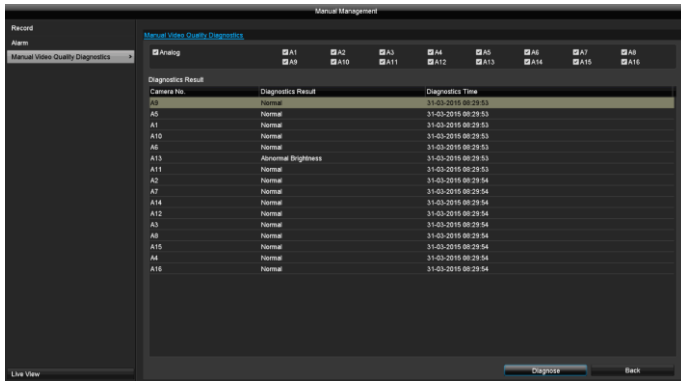
Click on **Trigger All** to activate all of the alarm outputs.

Click on **Clear All** to remove the settings.

Parameter	Description
Normal	Click on the icon to activate continuous recording for all channels for the whole day. Click on "Yes" to confirm your selection.
Motion detection	Click on the icon to activate motion detection for all channels for the whole day. Click on "Yes" to confirm your selection.

Manual Video Quality Diagnostics

Here, the cameras to be investigated using Manual Video Quality Diagnostics can be selected. Be aware that the diagnostics function for each channel must be switched on and configured under the menu "Camera" in order to do this.



By pressing the "Diagnose" button, manual analysis is started. Adjust the settings under the Camera menu if the diagnose result produces an error message (blurred image, colour cast etc.) even if the image settings are correct.

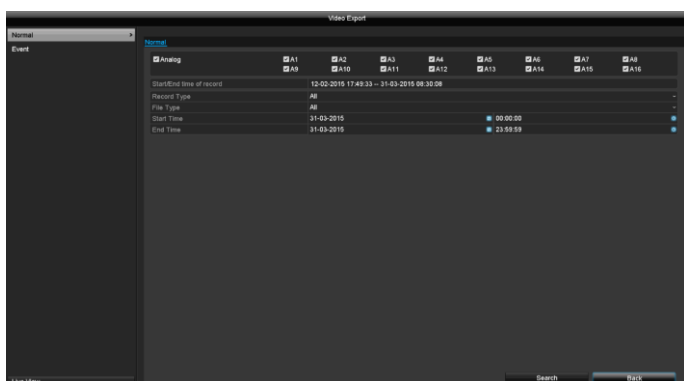
The diagnose result "Normal" indicates a correct camera image.

Video Export

In the menu, go to **Video Export** to export recorded video data from the recorder. The following options are available:

Normal	Export video data which was recorded with continuous record.
Event	Export video data which was recorded with event record.

Normal

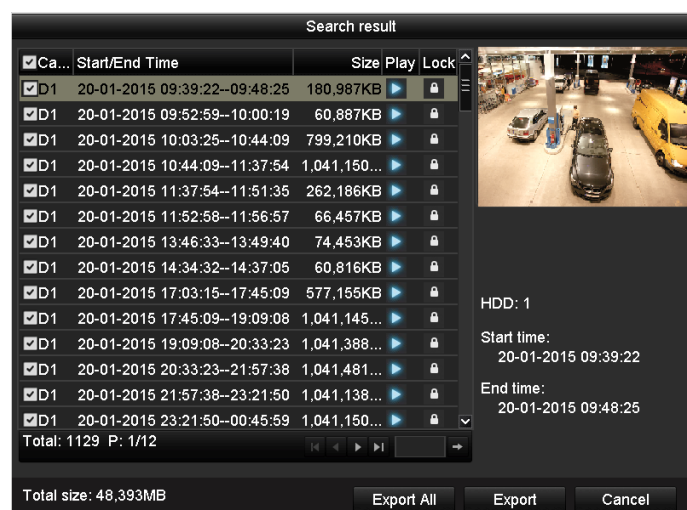


Note

The export function is used to store important recordings on connected external media, such as:

- USB media
- USB hard disk drives
- DVD writers

1. Enter the parameters.
2. Click on **Search** to start the search and the events screen will appear.

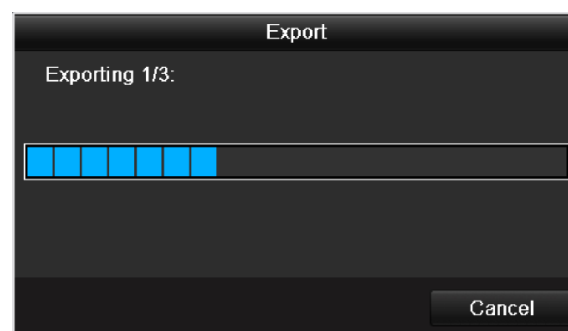


- The file size of each of the recordings and the total size of all recordings found are displayed.
- Click on to view the corresponding recording.
- Click on to lock and unlock a file. Locked files can no longer be overwritten by the system.

3. Click on **Export** to go to the Export screen.



1. Select the connected medium to be used for storage from the drop-down menu.
2. If the medium is not displayed in the list, click on **Refresh**.
 - If the medium is still not displayed in the list, disconnect it from the device and then reconnect it. See also the manufacturer's specifications.
3. Click on **Export** to start exporting. The progress of the storage process will then be displayed.



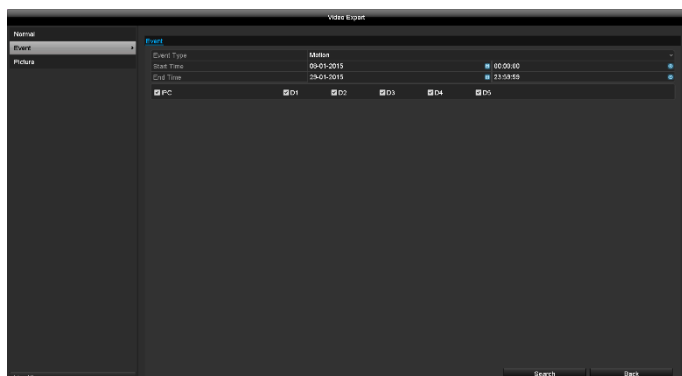
Note

Once the storage process is completed, you can select the data on the medium and play it back on the player (which has to be exported separately). This way you can check that the export was successful.

**Note**

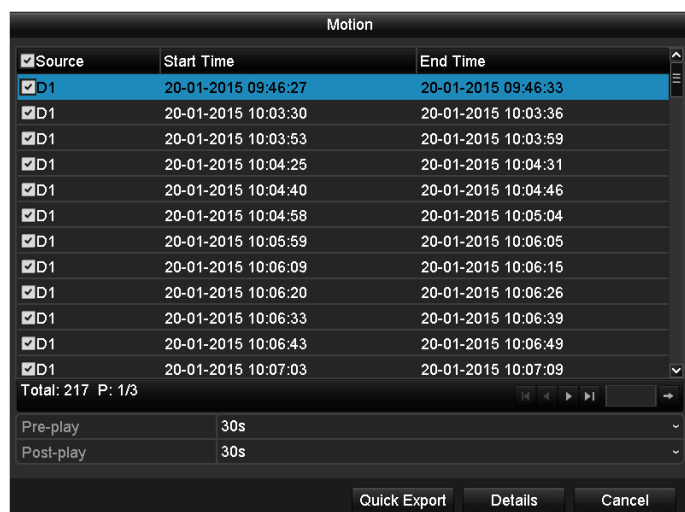
Pre-play recordings can only be viewed if recording was started before the alarm.

Event



Define the period of the recordings to be searched for using the "Start Time" and "End Time" selection fields. Select the camera by ticking or unticking the box and then click on **Search**.

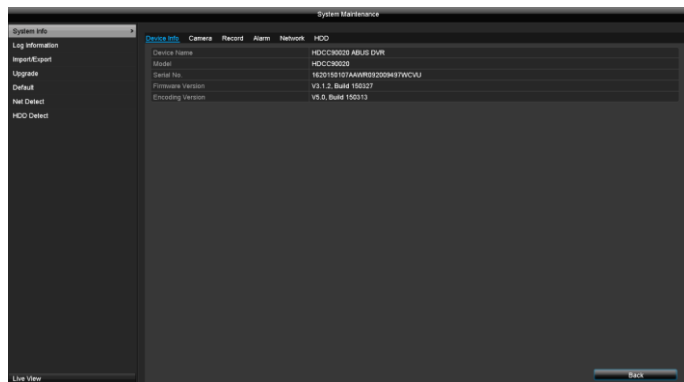
For both types of event, the following window will appear after clicking on the **Search** button:



Select the files to be exported by ticking or unticking the box. Under "Pre-play" and "Post-play", you can set the time before and after the alarm, which allows you to define the length of the video you export.

Click on **Details** to view the selected video. See **NORMAL** (page 55) for more information about the **Details** window.

Maintenance



Note

This menu is used for device maintenance and should only be used by experienced users.

Menu	Setting
System Info	Device Info (Serial No., Firmware Version etc.)
Log Information	In Log Information (=log file), you can search for recordings or information (S.M.A.R.T. hard disk drive status) by certain criteria, such as alarm, exception, operation or information.
Import/Export	Import and export settings
Upgrade	Performs a firmware upgrade
Default	Resets the system
Net Detect	Displays the transmission and reception rate of the recorder
S.M.A.R.T	Checks the hard disk drive for errors

System Info

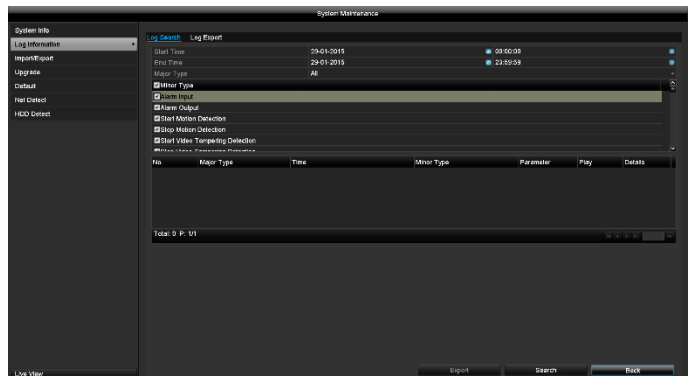


Note

The information menu shows the technical data for the device and information on the various settings of the cameras, recording, alarm, network and HDD.

This can be useful for support queries, for example.

Log Information



Note

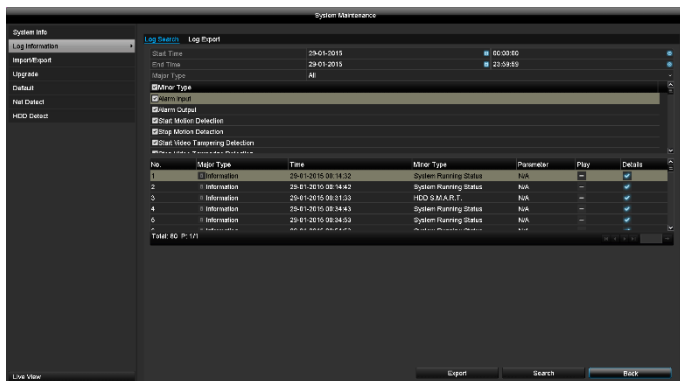
You can search for "events" according to the following main types/events/parameters:

- All
- Alarm
- Warning
- Operation
- Information

Major Type	Minor Type
All	-
Alarm	<ul style="list-style-type: none"> • All • Motion detection • Start/stop • Start/Stop Video Tampering Detection
Warning	<ul style="list-style-type: none"> • All • Video Signal Loss • Illegal Login • HDD Full • HDD Error • IP Conflicted • Network Disconnected • Exception Recording • Video input/output signals not equal • Recording Buffer
Operation	<ul style="list-style-type: none"> • All • Power On • Local: Unscheduled Shutdown • Local: Shutdown, Reboot, Login, Logout • Local: Change Settings • Local: Upgrade • Local: Start Recording
Information	<ul style="list-style-type: none"> • All • HDD Information

- HDD S.M.A.R.T.
- Start Recording
- Stop Recording
- Delete Expired Record

1. Select the event you wish to search for in the log and then select a sub-parameter.
2. Enter the date and time under Start Time and End Time, then click on **Search**.
3. The results will then be displayed:



- You can change the page using the navigation bar:

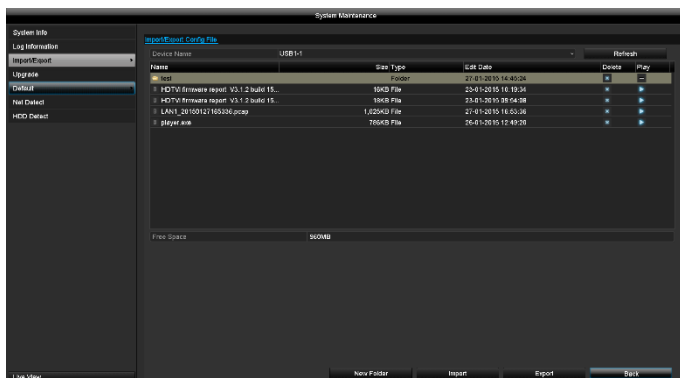


Note

To scroll forwards or backwards press (3) or (2).
To jump to the first or last page press (4) or (1).
To go to a specific page number enter it in field (5) and confirm by clicking on (6).

- Click on the "Details" icon for more information.
- Click on the "Play" icon to start the recording for the event as required.
- Click on **Export** to save the log file on a USB medium.

Import/Export



Note

The configuration data contains all of the settings for the device that have been adjusted since it was started up. This data can be saved on a USB medium and then used to configure another device in exactly the same way, for example.

Upgrade



Note

A device can be upgraded from a USB medium or via the network via FTP.

- Copy the upgrade file with the *.mav file extension onto the main directory of a USB stick.
- Insert the USB stick into one of the device's USB ports.

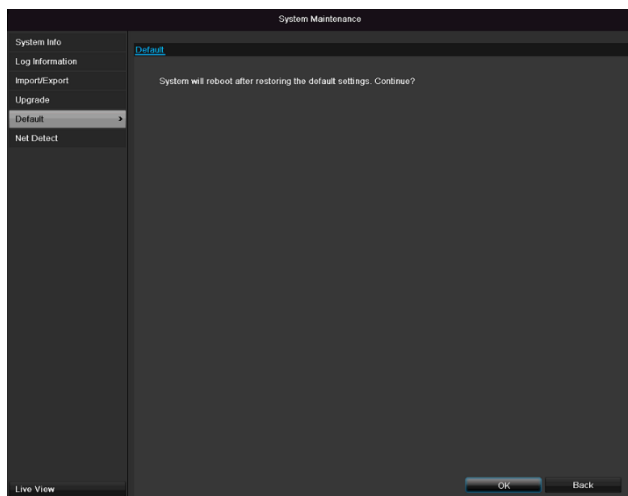
1. Select the USB port, clicking on Refresh, if necessary.
2. Select the upgrade file and click on Upgrade.
3. Wait until the device reboots.
4. If necessary check the firmware status in the Maintenance menu under Information. Carry out System Reset.

Note

Upgrades via FTP are carried out in the same way as detailed above.

- The PC must be on the same local network.
- Set up a PC as an FTP server.
- Enter the IP address of the FTP server .

Default



Note

This process involves the device being reset to the default factory settings.



Warning

All settings adjusted since the device was started up will be deleted (cameras, recording settings, PTZ, alarms etc.)

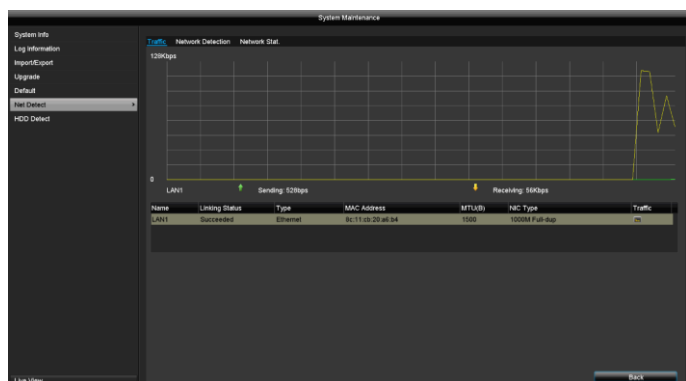
Avoid loss of data by saving the settings beforehand. It can be re-imported once the system has been reset.

Net Detect

Information regarding the network traffic and network interfaces is shown here.

Traffic tab

The network graphs can be used to measure continuous traffic on the recorder. The amount of data sent and received is shown in graph form. Depending on the network settings, the status and information for one or two network connections is shown in the field underneath the graph.



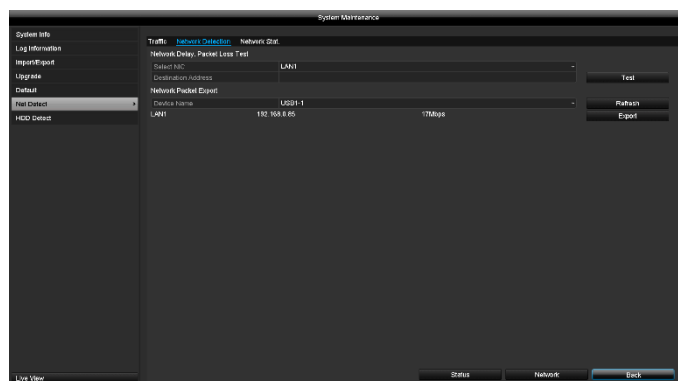
Sending

Shows the amount of data (in Mbit/s) currently being sent out by the recorder. The value increases as more users access video streams from the recorder over the network (web, app, PC application and network storage). Once the recorder limit value has been reached or exceeded, it will no longer be possible for all requested streams to be displayed.

Receiving

Shows the amount of data (in Mbit/s) currently being received by the recorder. The value increases as more IP cameras are added and as the bitrate of the camera stream is set to be higher. Once the recorder limit value has been reached or exceeded, the recorder will switch off camera channels.

Network Detection tab



Note

This view allows for the analysis of network and performance problems with the recorder.

Under "Network Delay, Packet Loss Test", you can check the connection to another device, such as a computer ('pinging'). Enter the network address of the device to be checked (e.g. 192.168.0.25) and click on **Test**.

Information on two parameters will appear:

Parameter	Setting
Average delay	The time the pinged device needs to reply.
Packet loss rate:	Displays the percentage of packets that were not transmitted.

**Note**

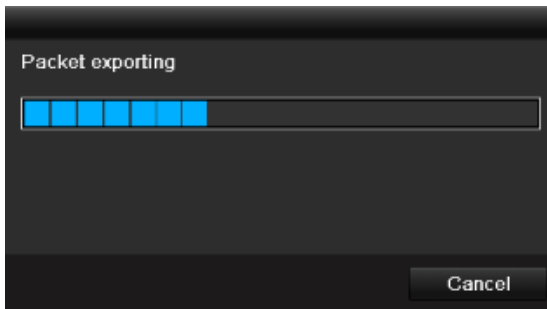
If the packet loss rate is high, we recommend that the "Network Delay, Packet Loss Test" is repeated.

**Note**

If the packet loss rate is still high, you should check that the network cables are correct and not damaged.
The higher the packet loss rate, the poorer the connection between the pinged device and the recorder.

Under "Network Packet Export", the settings of the individual connections can be exported according to the setting of the connection.

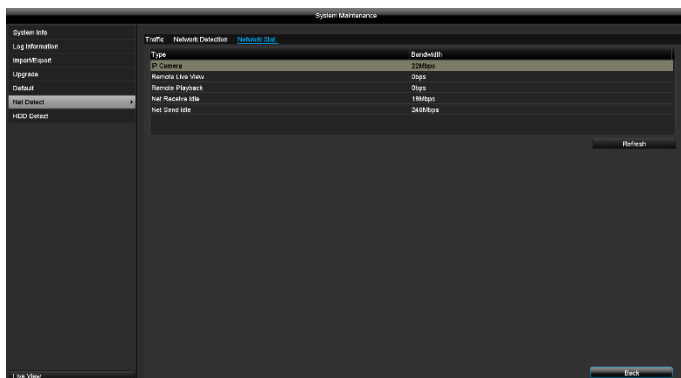
1. For "Device Name", select a storage medium to save the settings to.
2. Click on **Export**.



After the progress display finishes and initialisation is successful, an information window will appear. Close it by clicking on **OK**.

- Click on Status to display the status of the LAN connections (connected/not connected).
- Click on **Net Detect** to change your network settings.

Network Stat. tab



The bandwidth used by the device is displayed under this tab.

You can refresh the data by clicking on **Refresh**.

S.M.A.R.T



Click on the "HDD Detect" submenu.

This submenu gives you the option to check your hard disk drive for errors.

HDD	Selection of the hard disk drive to be processed
Self-test Status	Shows the status of the current self-test
Self-test Type	Select the type of self-test Short Test/Expanded Test/Conveyance Test
S.M.A.R.T	Click on the icon to start the self-test
Temperature (°C)	Shows the hard disk drive temperature
Power On (days)	Shows the operating days of the hard disk drive
Self-evaluation	Shows the status of the self-evaluation
Complete evaluation	Shows the status of the evaluation

Confirm the settings by clicking on **Apply** and exit the menu by clicking on **OK**.

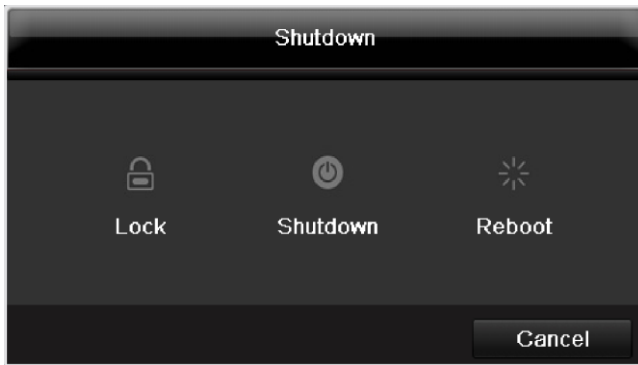
Checking the hard disk drive status

You can check the status of each hard disk drive in the "System Maintenance" menu. The S.M.A.R.T (Self-Monitoring, Analysis and Reporting Technology) information is stored in the log data.

- Open the log file and search by information/S.M.A.R.T. Hard disk drive. Setting up the hard disk drive alarms
- You can specify which alarms will inform you of hard disk drive errors.

To do this, open "Exception" in the "Settings" menu.

Shutdown



Note

- Select **Lock** to lock the operating menu.
- Select **Shutdown** to switch the device off.
- Select **Reboot** to reboot the system (switch off and back on).

Fault rectification

Before contacting the Service department, read the following information to determine the possible cause of any fault.

Fault	Cause	Solution:
No power	Power cable not connected	Connect the power cable properly to the socket
	Power switch at OFF	Set power switch to ON
	No power supplied from socket	If necessary, use another device at the socket
No picture	The screen is not set to receive	Set correct video input mode, until an image is received from the recorder
	Video cable is not connected properly	Connect the video cable properly
	The connected monitor is switched off	Switch on monitor
No sound	Audio cable is not connected properly	Connect the audio cable properly
	Devices connected via audio cable are not switched on	Devices connected via the audio cable are not switched on
	Audio connecting cable is damaged	Replace cable
Hard disk drive not functioning	Connection cable is not connected properly	Connect the cable properly
	Hard disk drive faulty or incompatible with the system	Replace the hard disk drive with a recommended hard disk drive
USB connection not functioning	Device is not supported	Connect correct USB medium, USB 2.0
	USB Hub was used	Connect USB medium directly
Network access not possible.	Network cable connection loose	Insert network cable.
	Network settings (DCHP, IP address etc.) incorrect	Check and if necessary correct network configuration, see page 27.
Recording is not possible	No HDD, or HDD not initialised	Install and initialise hard disk drive
Sudden switch-off	The internal temperature of the device is too high	Clean the device and/or remove any objects impeding the ventilation

Cleaning and care of the device

Note

- The device is maintenance free.
- Protect the device against dust, dirt and damp.

Technical data

Subject to technical changes and correction without notice.

ABUS video recorder	HDCC90020
Video compression	H.264
Camera inputs	16 x HD-TVI/16 x Analogue
Monitor outputs	1 x VGA, 1 x HDMI
Operating mode	Triplex
Resolution (Live view)	VGA: 1080P: 1920*1080/60 Hz, 1280*1024/60 Hz, 720P: 1280*720/60 Hz, 1024*768/60 Hz BNC Output: PAL: 704x576, NTSC: 704x480
Resolution @ frame rate per Camera (recording)	1920 x 1080 @ 25 fps, 1280 x 720 @ 25 fps, 640 x 480 @ 25 fps, 704 x 576 @ 25 fps, 352 x 288 @ 25 fps
Total frame rate	400 fps
Compression levels	6
Post-alarm memory	0–30 sec./5–900 sec.
Storage medium	4 x 3.5" SATA HDD
Storage	3 x USB 2.0
Views	1/4/6/8/9/16
Recording modes	Manual, time schedule, motion detection, alarm, VCA
Search modes	By event, date and time, S.M.A.R.T., VCA
User levels	2 (max. 31 users)
Network connector	1 x RJ45 10/100/1000 Mbps
Simultaneous network access	128 camera connections
Network functions	Live view, playback, data export
DDNS	√
NTP	√
Alarming	Acoustic warning, OSD signal, email, CMS
control	USB mouse, remote control
OSD languages	English, German, French, Dutch, Danish, Italian, Polish, Spanish, Swedish, Russian
Power supply	230 V AC, 47~63 Hz
Power consumption	<55 W (without hard disk drive)
Operating temperature	-10°C ~ + 55°C
Dimensions (WxHxD)	470 x 95 x 450 mm
Weight	≤ 5.0 kg without hard disk drive
Certifications	CE

HDD storage capacity

In addition to the physical storage capacity of the hard disk drive used, the storage space required for recording and monitoring depends on the resolution set as well as the bit rate of the recording.

On the CD included in the delivery, there is a calculator for working out necessary used storage on a hard disk drive. In addition, these software packages can also be found on our homepage for download.

Overview of connection combinations

It is possible to connect a SPOT monitor. Use the table below to find out what combinations are possible. A tick indicates that the combination is possible, a cross shows that it is not.

VGA + HDMI	VGA only	HDMI only
✓	✓	✓

Disposal

Notes on EC directives for waste electrical and electronic equipment

For the protection of the environment, at the end of its useful lifespan, the device may not be disposed of in household waste. Disposal can be carried out at suitable national collection points. Obey local regulations when disposing of material.



Dispose of the device in accordance with EU Directive 2002/96/EC - WEEE (Waste Electrical and Electronic Equipment). If you have any questions, please contact the municipal authority responsible for disposal. Information on collection points for waste equipment can be obtained from the local or district authorities, local waste disposal companies or the dealer.

Notes on RoHS EU Directive

The device complies with the RoHS directive.

Compliance with the RoHS directive means that the product or component contains none of the following substances in higher concentrations than the highest concentrations in homogeneous materials, unless the substance is part of an application that is excluded from the RoHS Directive:

- a) 0.1 % lead (by weight)
- b) Mercury
- c) Hexavalent chromium
- d) Polybrominated biphenyl (PBB) and polybrominated diphenyl ether
- e) 0.01 % cadmium (by weight).

Glossary

Technical terms used

16:9

Cinema orientated aspect ratio for wide-screen displays.

Screen diagonal

Size information for displays: Distance between the bottom left-hand corner to the top right-hand corner – in inches or centimetres.

Browser

Program for viewing websites on the World Wide Web.

CIF

'Common Intermediate Format'.

Originally intended for conversion of PAL to NTSC standard. CIF equates to a video resolution of 352 x 288 pixels, 2 CIF 704 x 288 pixels, 4 CIF 704 x 576 pixels.

DDNS

'Dynamic Domain Name System Entry'

A network service that keeps and updates the IP addresses of its clients in a database.

DHCP

'Dynamic Host Configuration Protocol'

A network protocol that enables the automatic incorporation of devices (clients) into existing networks. As such, DHCP servers (such as internet routers) allocate the IP address, the network mask, the gateway, the DNS server and, if necessary WINS server automatically. The client only has to be set to obtain the IP address automatically.

Domain

Domains (name space) that identify Internet pages (e.g. www.abus-sc.de).

Dual stream

Dual stream designates a video transmission method. A high resolution recording is made along with a low resolution transmission, e.g. via the network.

DVR

Digital Video Recorder; a device for recording various video and audio sources (analogue, digital). The data is compressed for recording and stored on hard disk drives.

CVBS

"Colour, Video, Blanking and Synchronisation" signal. The most simple variant of video signals, also called "Composite Signal". Picture Quality is comparatively low.

H.264

(MPEG-4 AVC); standard for high-efficiency compression of video signals. Used in such things as Blu-ray discs or video conferencing systems.

HDD

'Hard Disk Drive', hard disk (magnetic disk store)

Digital data store in computers or NVRs.

GIGABYTE

Unit of storage capacity for storage media (HDD, USB, SD/MMC cards).

HDVR

Hybrid DVR, DVR for recording from analogue cameras and network cameras.

http

'Hypertext Transfer Protocol';

A process for data transfer across networks. Mainly used for the presentation of websites in a browser.

INTERLACED

Line skip procedure

IP address

An address on a computer network based in the internet protocol (IP), this enables various devices to be addressable on the network and individually accessible.

JPEG

Low-loss compression process for photos. Most digital cameras store their pictures in JPEG format

MPEG

Abbreviation for Moving Picture Experts Group. This is used as an international standard for the compression of moving pictures. On some DVDs the audio signals are compressed and recorded in this format.

NTP

Network Time Protocol

A process for time synchronisation across networks. Also SNTP (Simple Network Time Protocol) that represents a simpler form.

NTSC

Colour television standard in the USA. The process differs in certain details from the European PAL system: An NTSC full screen consists of 480 visible lines and a total of 525 lines. Sixty half images are displayed per second. Compared with PAL, the system is more susceptible to colour distortions.

PAL

"Phase Alternating Line"; European colour TV system. It uses 576 visible picture lines, with the lines used for management signals, a full screen consists of 625 lines. Fifty half images are displayed per second. Its colour signal phase position changes from picture line to picture line.

PANEL

Interior working of a flat display (the terms LCD or plasma panel are used).

PC

A PC can be used as a remote access point with the software supplied or with a browser.

Pixel

"Picture element". Image point, image element refers to the smallest unit of a digital image transmission or display.

PIP

"Picture in Picture". Abbreviation for the "picture-in-picture" function, where two signal sources can be seen on the screen at the same time. When this occurs, the second signal source is placed over the first one.

PPPoE

'PPP over Ethernet' (Point-to-Point Protocol)

Network transmission process for establishing connection via dial-up lines that are used with ADSL connections, for example.

PROGRESSIVE

Scanning by line or image display, as opposed to line skip or "Interlaced".

RTSP

'Real-Time Streaming Protocol'

Network protocol for the control of continuous transmission of streams or software via IP-based networks.

SNMP

'Simple Network Management Protocol'

A network protocol that regulates the communication between the monitored devices and the monitoring station. Therefore, with appropriate software, the device status can be monitored.

USB

'Universal Serial Bus'

Serial bus link for the connection of, among other things, storage media in operation. Maximum usable data rate for USB 2.0: approx. 320 Mbit/s (approx. 40 MB/s).

VGA

"Video Graphics Array"" For PCs, the usual interface for analogue video signals – usually involves RGB signals.

INCH

Measurement of screen diagonals. An inch is equal to 2.54 centimetres. The main typical sizes of 16:9 displays: 26 inch (66 cm), 32 inch (81 cm), 37 inch (94 cm), 42 inch (106 cm), 50 inch (127 cm), 65 inch (165 cm).

About the internal hard disk drive

The internal hard disk drive (HDD) is very sensitive. Operate the device in accordance with the following instructions to avoid hard disk drive faults. Important recordings should be backed up on external media to avoid accidental data losses.



Note

- Do not move the device during operation.
- Dampness inside the device can condense and cause the hard disk drive to malfunction.
- When the device is switched on, never remove the mains connector plug from the socket or interrupt the power supply by tripping the safety switch.
- Do not move the device immediately after switching it off. To move the device carry out the following steps.
 1. Wait at least two minutes after the OFF notification (device display).
 2. Unplug from the mains.
 3. Move the device.
- If there is a power cut whilst the device is operating, data on the hard disk drive can be lost. Use a UPS.
- The hard disk drive is very sensitive. Improper operation or an unsuitable environment could damage the hard disk drive after a number of years of operation. Indications of this are playback stopping unexpectedly and visible mosaic effect in the image. Under certain circumstances there is no indication of a defective hard disk drive.
- If there is a defect, no playback of recordings is possible. In this case the hard disk drive must be replaced

16-channel analogue HD video recorder

HDCC90020

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